OCTOBER, 1909

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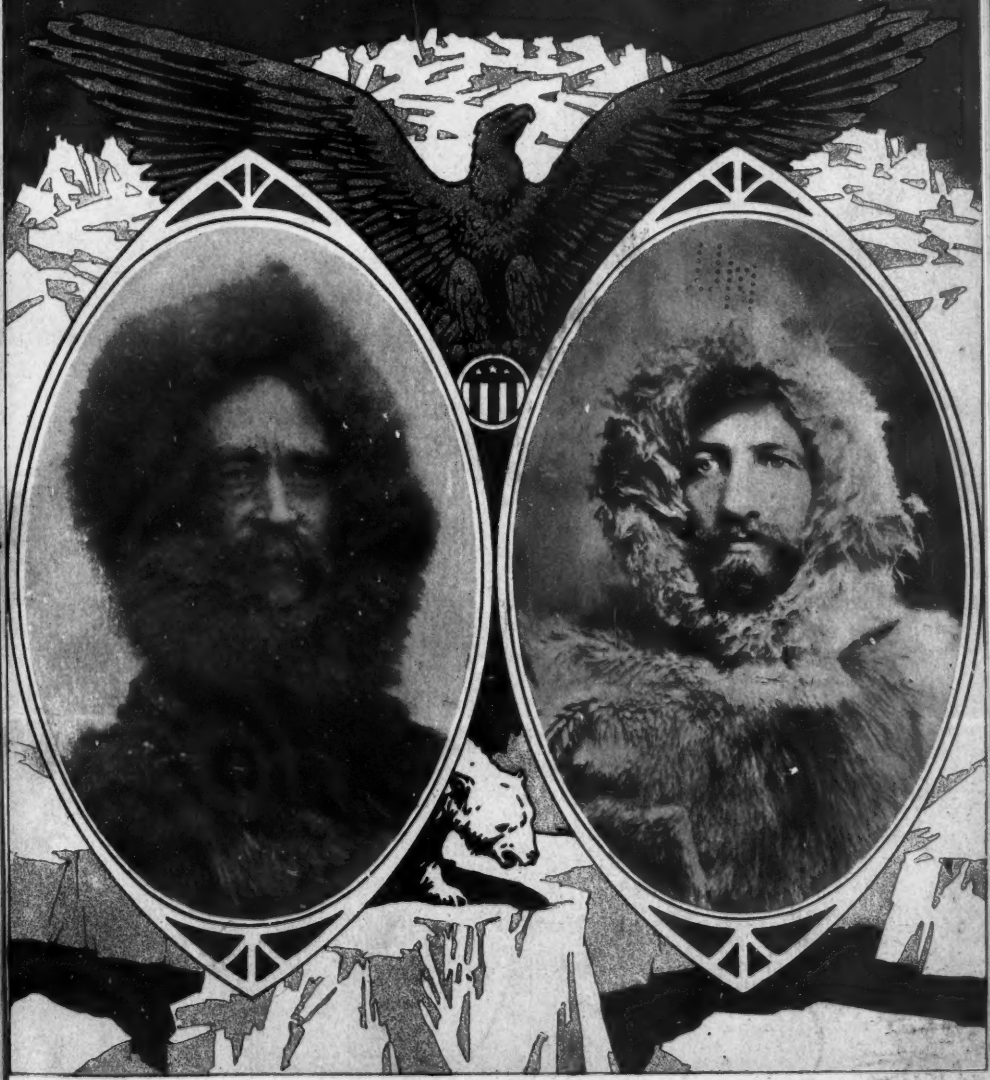
NATIONAL MAGAZINE

EDITED BY Ira Mitchell Chapple



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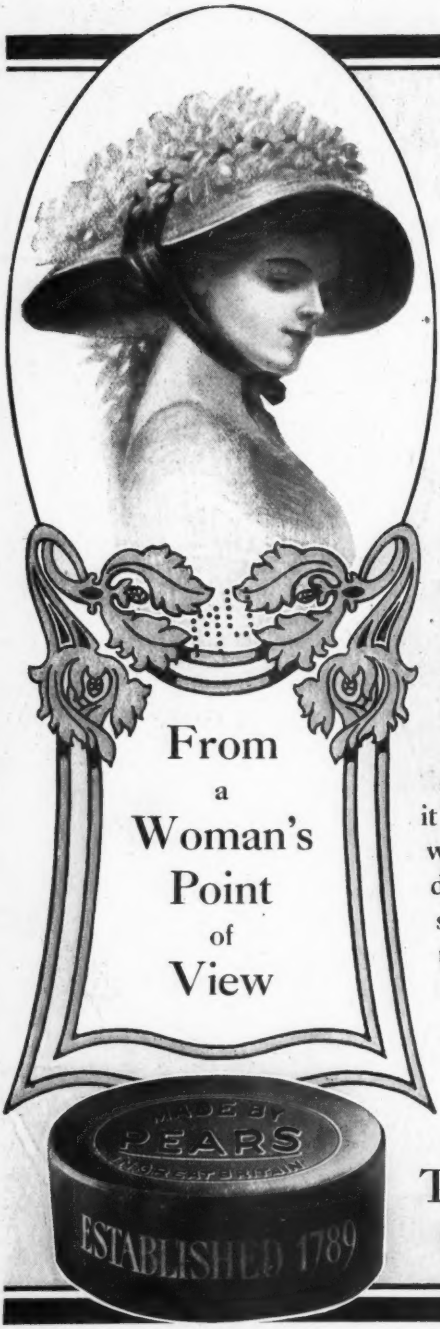

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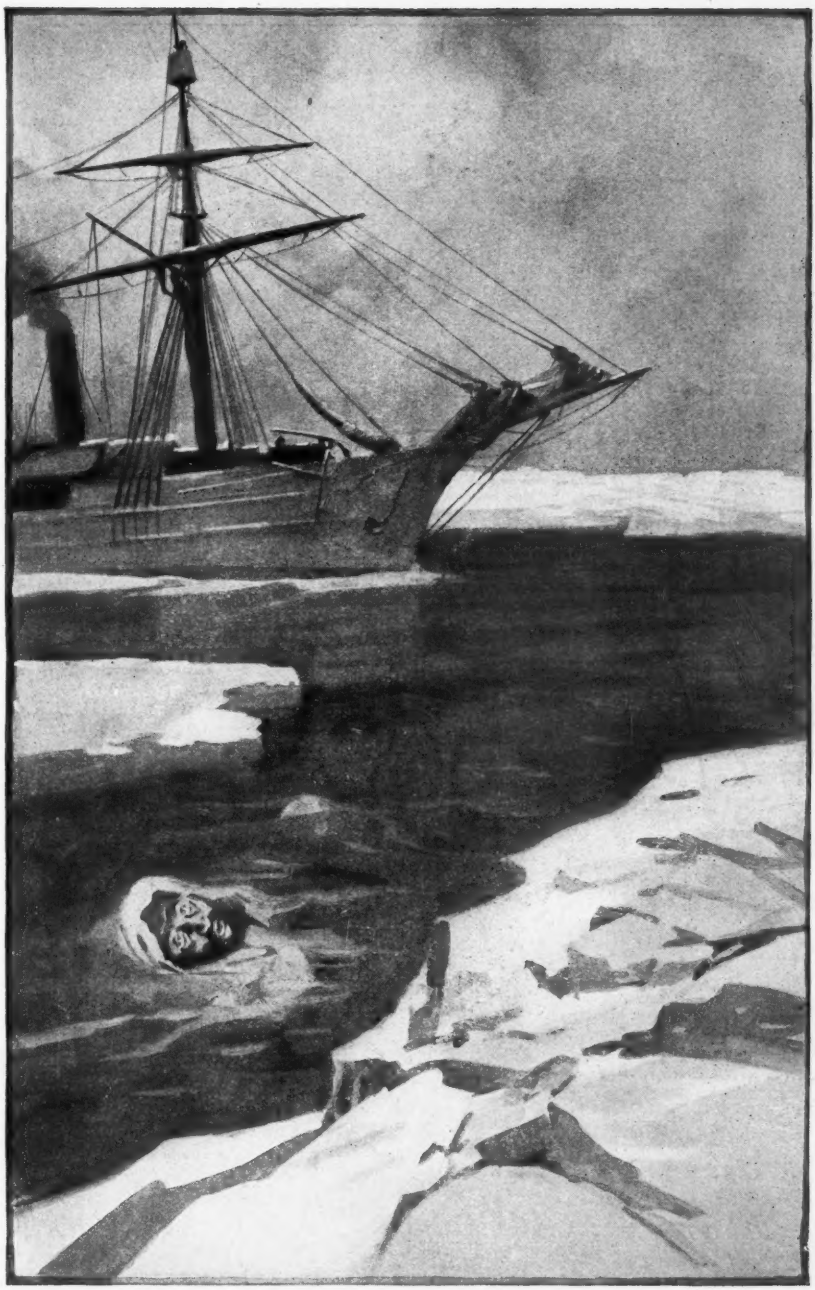
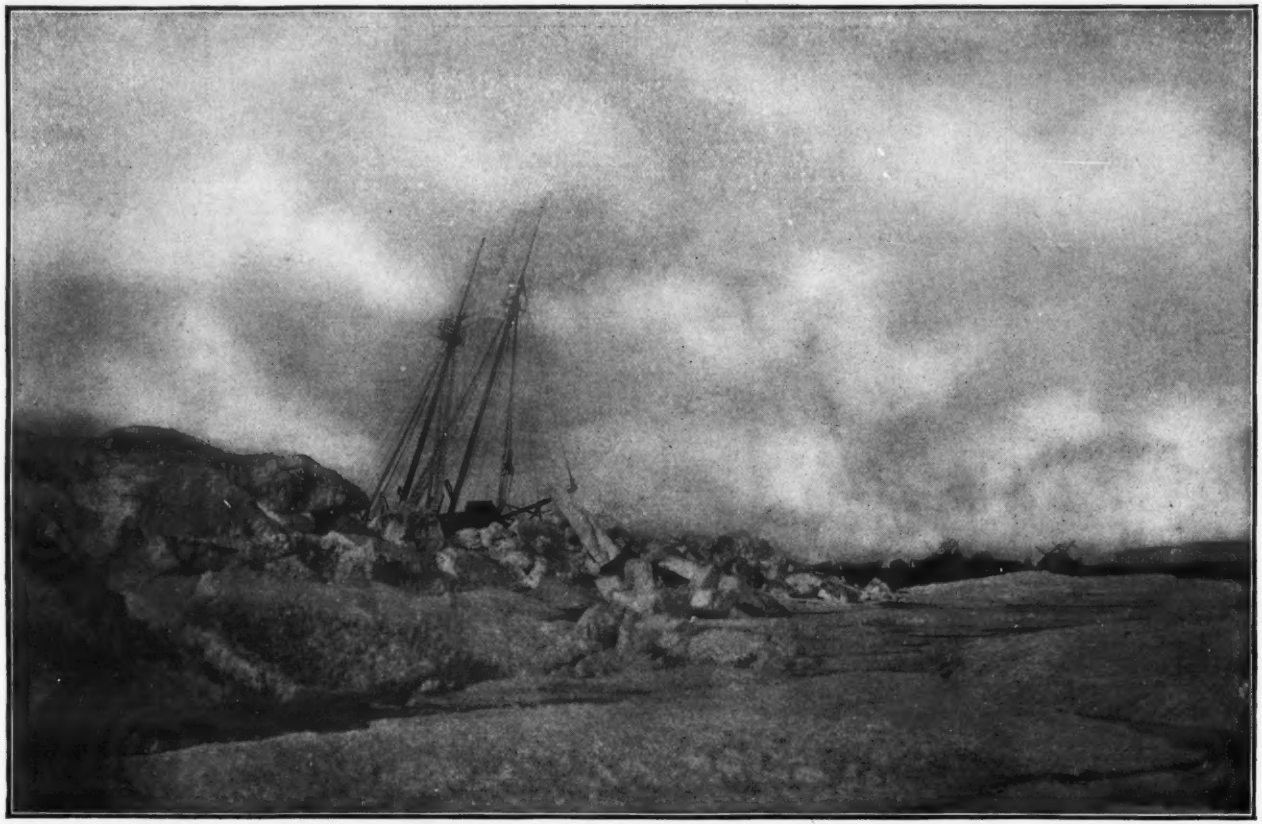


"I clearly saw that it was the body of a man . . . it might be Andree who had been lost in the Arctic about two years before."

—See "Twenty Years in the Arctics."



"In six seconds this ice jammed in on port side of the Rosario, threw even the dogs over the deck rail, and crushed the great white oak timbers of the ship, grinding them to splinters."—See "Twenty Years in the Arctics."

NATIONAL MAGAZINE

VOLUME XXXI OCTOBER, 1909 NUMBER ONE

Affairs at Washington

By Joe Mitchell Chapple

OLD GLORY floats—figuratively and possibly literally—over the North Pole, and all the world stands agog, hearkening to the frigid remarks exchanged between explorers and discoverers. Washington and the geodetic survey will have another opportunity to choose sides while history is in the making.

Dr. Cook's first announcement set the entire world aglow with interest, and thrilled even the most indifferent with the thought that at last the North Pole had been discovered. For centuries past this has been the dream of explorers and scientists, and that frozen land has been the winding sheet of of many a brave, heroic pioneer associated with some one of the numerous expeditions. The date of the discovery, as fixed by Dr. Cook's announcement, is April 21, 1908. Commander Peary followed close upon his heels with the information that the pole was discovered by him on April 6, 1909. Then came the passage at arms with wireless telegraphy, when Commander Peary from the far North disputed the claims of Dr. Cook, who was meantime enjoying the plaudits of the kings and courts of Europe, while he related the simple story of finding the pole covered with an area of glare ice, which explodes the theories of a great funnel-shaped opening that might conduct the explorer to the Garden of Eden long lost to mankind.

In every home, in every club, over the counter of every country grocery store, the people have discussed the expressions of the two explorers. Many years have elapsed since any announcement made over the telegraph wires has created such universal interest. The story of the finding of the North Pole has submerged all other sensations for the time—at the moment even baseball was overlooked and the public were absorbed in the warfare between the newspapers for the original and exclusive right to the authentic story of the explorers. Injunctions and counter-injunctions were issued thick and fast among the newspapers, and finally some erudite judges decided that news of such import to the scientific world could not be made exclusive under the copyright law. While the excitement was at full height even the doings on the aeroplane grounds at Fort Meyer scarcely created a ripple of interest.

What stirring events are recorded for the year 1909! In the realization of the dreams of explorers and the ambitions of aeronauts the mysteries of earth and heaven are unfolding. What will be the next thing to attract the attention of scientists and explorers? The good old world cannot conveniently increase its size, though happily it has two poles and part of the Southland still remains unseen by human eye. Without the picturesque polar bears, inhabited only by stray polar birds, possibly the South Pole will never prove quite so attractive to adventurous spirits as the North. The leaden and purple skies, the white outlines of the frozen Arctics have always had a curious fascination for a sturdy class of men, who differ much from those who sail the warm waters of the Southern seas, or dream away long hours beneath the radiance of the tropic moon.

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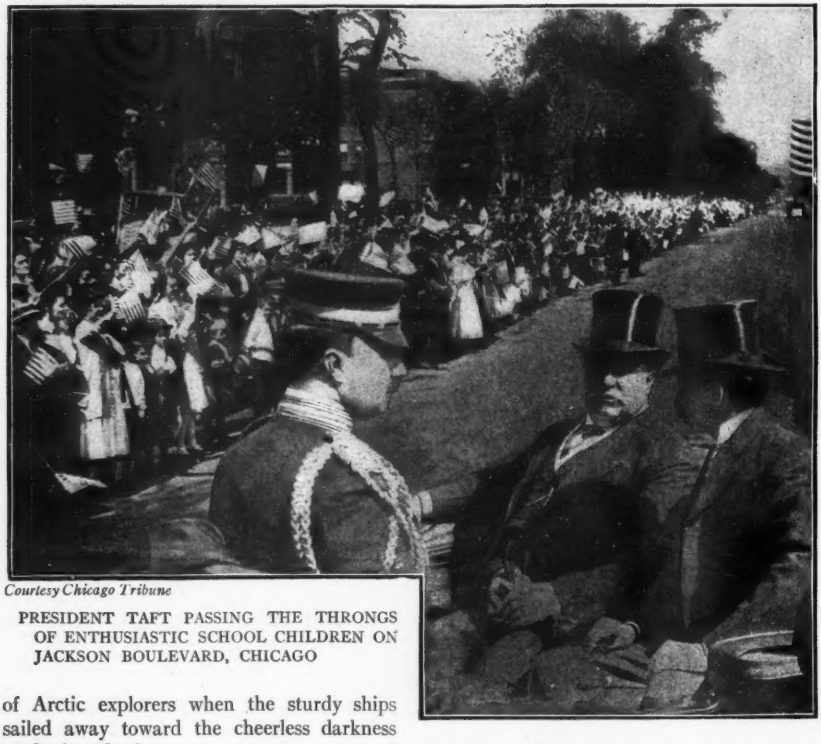
The North seems more in harmony with the craving for vigorous effort that bespeaks the ambition of our age. For modern ardent spirits there still remain the wonders of the skies, and men who would have been polar explorers in earlier times may sail the seas of space in fluttering aeroplanes or dirigible balloons, in search of a good landing on Mars, wafting out of sight with scarcely the faint hope of return that has upheld the friends of Arctic explorers when the sturdy ships sailed away toward the cheerless darkness of the icy North.

* * *

IN the crisp autumn weather, when vacation days are past, the embassies are opened and the wheels of government at Washington go round and round without even a creak, despite the thrilling news wafted over the wires. From nine to four-thirty o'clock is the time allotted for work as usual; in the play hours in the park, in the avenues and streets and at the Capitol, visitors are more numerous than ever, meditating, reading and "viewing" while the "seeing Washington" automobile caravans pass by, increasing in number every year. More than ever it is felt that a trip to Washington is the one thing to which every American is predestined as his birthright.

* * *

EVEN the staid old government is affected by the giddy whirl of events, and for two months the White House will whisk over the country on wheels. From the snug and comfortable retreat at Beverly, the summer capitol, President Taft started on his great continent-encircling tour on September 15th—after he had an elaborate Godspeed banquet in Boston. Two special cars were provided ; in the first was the President and his personal party, and in the second were the newspaper and secret service men. Stationery, typewriters and all the appurtenances necessary for the work of the chief executive were to be found in the gipsy-like caravan moving over the country, and covering nearly 13,000 miles in sixty days and



Courtesy Chicago Tribune

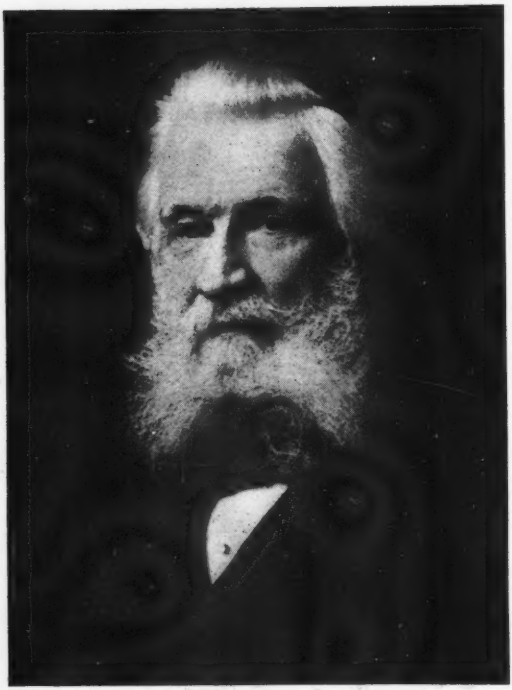
PRESIDENT TAFT PASSING THE THRONGS OF ENTHUSIASTIC SCHOOL CHILDREN ON JACKSON BOULEVARD, CHICAGO

Courtesy Chicago Tribune

PRESIDENT TAFT ON THE STAND GREETING ONE OF THE BATTALIONS OF 165,000 SCHOOL CHILDREN IN CHICAGO
THEY WERE ALL "JUST KIDS" THAT DAY

traversing over thirty of the forty-six states.

No one thing in national life has been so effective in bringing people together as these presidential tours, which are in strong contrast to the elaborate jaunts of royalty in other lands. Fortified for scores of banquets and primed for seventy-five set speeches, besides numerous extemporaneous talks, President Taft will be immersed in work that may well recall old campaign days when he insisted that not only should a candidate keep in touch with his constituents while running for office, but that he should be even more careful to do so when actually installed and engaged in the work of serving his country.



GENERAL SAMUEL CROCKER LAWRENCE
Medford, Mass.

The new Grand Commander in Scottish Freemasonry. He succeeds Henry L. Palmer, who for thirty years was Sovereign Grand Commander of the Ancient and Accepted Scottish Rite, 33rd Degree, Northern Masonic Jurisdiction of the United States, one of the highest positions in Masonry in the United States, the Northern Jurisdiction being the largest numerically in the world

What a panorama of American activities and development the presidential tour brings before the eye of the chief executive, who has the faculty of seeing things that might escape the attention of average tourists with abundant leisure to "see." An intrepid and tireless traveler, he never seems so happy as when in the midst of the people, observing by psycho-contact.

The impressive overture for the tour was at Chicago. The school children, 165,000 strong, with unfurled flags in their hands, extending for miles and miles along the curb of Michigan Avenue, made a picture that brought tears of patriotic pride to the eyes of those in line. It was a thrilling moment as the President's automobile whirled noiselessly down the avenue; with his handkerchief aloft, he spoke to the children in smiles—a language that will be well understood by the sturdy little patriots in review. Their bright faces and lusty cheers were plaudits that the President will never forget. Then there was the ball game—with its fly in the ointment when the Cubs lost—the visit to the Art Institute; the Hamilton Club lunch; the bankers ball and the labor meeting. Every member of the Chicago family—children, father and mother—had shared the pleasure of entertaining the President. It was a memorable ovation not only to the chief executive, but to the great republic which he represents. When he returned to his car, "The Mayflower," landing in a Plymouth Rock switch in the Northwestern Station that night, an itinerary of the day's visit looked more like a week's work, and truly reflected the hustling, active spirit of Chicago.

Traveling in the car with President Taft are Secretary Mischler and his typewriter battery, busily engaged transcribing speeches as they are delivered at the various stations. Mr. Mischler has been with the President for a number of years and was close at hand in the thick of his political campaign.

The president's itinerary is taking him direct to the Northwest, then down the Pacific

DR. FREDERICK A. COOK
As he appears at home talking over his Arctic experiences

CHARLES G. DAWES

Coast to El Paso, where the party will be joined by President Diaz of Mexico, this being the first time that the presidents of the two republics have met, and the first time that a President of the United States has made an excursion to a foreign land. Swinging through the great state of Texas, the presidential party will spend a few days on a ranch, thence to St. Louis, a voyage of four days down the Mississippi next breaking the monotony of railroad travel preceding a quick return to Washington.

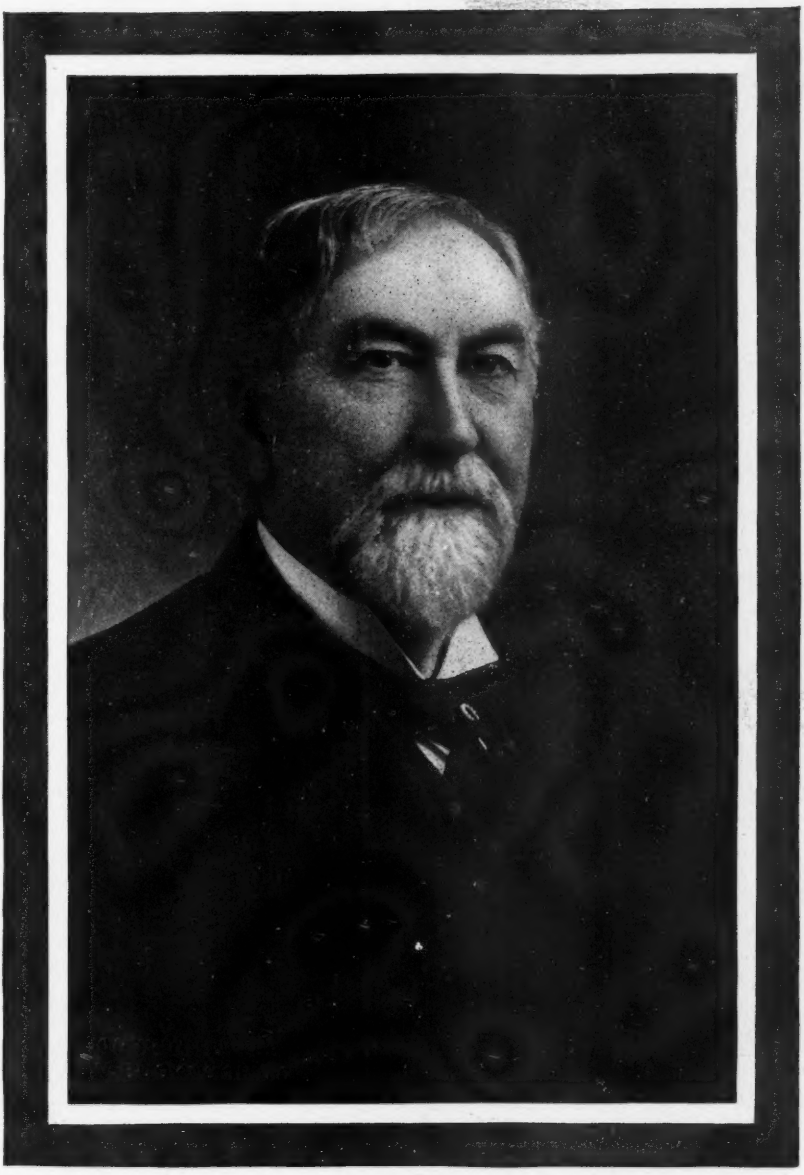
Sixty days of sight-seeing and effort, sixty days of banquets and speech-making, would wear out any ordinary man, but President Taft will reach the White House fresh and ruddy as though returning from a pleasure outing rather than a governmental function of great import to the nation.

* * *

THE new Grand Commander in Scottish Freemasonry, General Samuel C. Lawrence, was born at Medford, Massachusetts, in 1832. A graduate of Harvard in 1855, he received his degree as Master of Arts in 1858. He was engaged in the banking business in Chicago, 1856-1857, but joined his father and brother of the widely known firm of Daniel Lawrence & Sons, Medford, in 1858 and in 1867 became sole proprietor, retiring from business in 1906.

From 1875 to 1884 he was president of the Eastern Railroad Company, that road being leased in 1884 to the Boston & Maine Railroad Company, of which he became a director; in 1893 he was made a director and member of the executive committee of the Boston & Maine Railroad Company, holding like positions in the Maine Central Railroad Company since 1877. For some years he was a director of the Atchison, Topeka & Santa Fe railroad, and is a trustee of the Northwestern Mutual Life Insurance Company, Milwaukee, Wisconsin, a position he has had over twenty years.

Having joined the Massachusetts militia in 1855, he became Colonel of the Fifth Massachusetts Regiment of Infantry in 1860 and was wounded at the first battle of Bull Run in July, 1861. He was appointed Brigadier-General of the Massachusetts Militia, 1862-1864, and was commander of the Ancient and Honorable Artillery Company in 1869. The honor was conferred upon him of being



HON. NATHAN BAY SCOTT, UNITED STATES SENATOR FROM WEST VIRGINIA
Senator Scott's article on West Virginia's Resources appears in this issue of the NATIONAL

HON. SERENO E. PAYNE

elected first mayor of the city of Medford, serving from 1892 to 1894.

He became Grand Master Mason of Massachusetts, December, 1880-1883; Grand Commander of Knight Templars of Massachusetts and Rhode Island, 1894-1895, and is Sovereign Grand Commander of the Ancient and Accepted Scottish Rite, 33d degree, he having been an active member and officer of the Supreme Council, 33d degree, for many years.

General Lawrence is a man of broad mind, generous impulses and is a typical American in all his ways. Whether it be at his home in Massachusetts, on his plantation in Florida, or elsewhere, his forceful and earnest personality is always apparent. To his native city he has made many benefactions, including one of the finest militia company armories in Massachusetts.

* * *

SINCE his induction as president of the New York Central, long accounted America's greatest railroad, Mr. W. C. Brown has done much to bring the public into closer harmony and a truer appreciation of railroad corporations. His addresses at different banquets, delivered during the past two years, seem almost prophetic in the way he has foretold conditions.

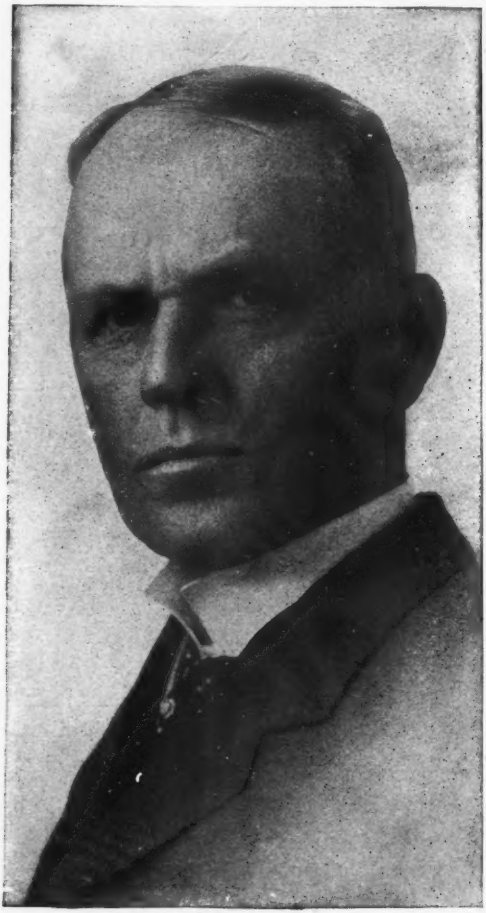
Mr. Brown is a long-time friend and admirer of Mr. Roosevelt, looking beyond the immediate to the ultimate effect of the things the ex-president has done. An intense believer in civic honesty and in the strictest code of honor in corporate as well as in individual relations, the New York Central executive has not only impressed the traveling public in the territory which his system covers, but his policy has effected a marked note of improvement in relations between the public and railroads all over the country. So, while accepting his grave public responsibility, he has in no way compromised the interests of stockholders and investors, but has rather enhanced values that were looked upon with some doubt a few years ago.

The New York Central, by the electrification of its road into the Grand Central Station of New York, was the first railway to adopt this means of locomotion, in place of steam—on any large scale. The smoke and fumes of the ordinary railway station are happily missing at the Grand Central. This is merely an instance of the progressive policy, always liberal and just, with which the public is met.

During the present year, the low excursion rates from Chicago to the East stimulated heavy traffic, much larger than ever before, though with no special events or circumstances

COMMANDER ROBERT E. PEARY
Last portrait taken of Peary before he started on his successful Polar trip

to attract travel. The service of the Twentieth Century Limited, between Boston and Chicago, and New York to Chicago, is an instance of how railroads place at the public disposal many improved and costly conveniences with very little hope of securing adequate returns for some years to come. President Brown's policy, from the start, has been to sell to the people the best possible transportation at the lowest possible price consistent with ample provision for safety and comfort, and a regard for the best interests of the great machinery represented in this railroad.



W. C. BROWN
President of the New York Central Lines

The time has come when a large portion of the money laid aside for educative purposes is being expended on travel study, recognition of the educational value of this method being a very significant movement of the present day. Formerly, a young man plowed his way through acres of dry-as-dust learning at school and college, and if the family finances allowed, was sent to "make the grand tour" of Europe, that he might broaden his knowledge "and acquire polish."

At the best, this course of travel often came too late in life to revive jaded interest and impress the intellect as would have been possible had such delightful scenes been visited in youth, when impressions are deep and bear fruit in beneficent memories and associations.

Of late years numerous expositions, excursions, conventions and celebrations in the United States have gathered together millions of people, and these have included a much greater proportion of children than was usual in the last century. Suburban transit has also largely annihilated the fear of "distance from home." Thousands of children daily traverse from twenty to sixty miles to attend school or reach some desired destination.

The "travel-study" system of teaching is being ably expounded and splendidly encouraged by all of the leading railroads. No writer could recount New York history of the last twenty-five years without including some references to the growth and development of the New York Central, whose Four Track series forms a "Seeing America" library that has opened the eyes of teachers and parents everywhere to the necessity of giving children the benefit of more outdoor study and a wider personal knowledge of their own state and nation and the practical resources of the people. History, botany, geology, zo-ology are all more vividly interesting and more easily understood when one has seen the places, or gathered specimens, in person. Now that the sections where such

Photo by Bell

HON. GEORGE B. CORTELYOU, EX-SECRETARY OF THE TREASURY
President of the Consolidated Gas Company of New York City

See page 706

THE LATE E. H. HARRIMAN

lessons may be learned can be reached in a ride of half a day or less, and at greatly reduced prices for the round-trip excursion, this mode of teaching is becoming increasingly popular.

* * *

THE other day, when Senator Stone was deliberately taking off his rubbers, one of his friends asked him if those were the real "gum shoes" which had given him his soubriquet of "Gum Shoe Bill." His answer is not on record. The Senator from Missouri has now been elected for another term, and his campaign has been singularly successful. That droll Missouri manner conceals a forceful determination which helps him successfully over obstacles without making much concussion. Although a native of Kentucky, he has spent the greater part of his life in Missouri, and so acquired the Missouri habit of having "to be shown" before he jumps to any hasty conclusions.

* * *

THE location of the government's new forestry laboratory, in connection with the University of Wisconsin, at Madison, is a matter of congratulation, and is looked upon as an important step forward in the development of the forestry bureau. In this laboratory experiments will be made looking toward the better utilization of timber and lessening wood waste; it is believed that a solution for many vexations will be found. A force of engineers and experts on all kinds of timber tests, wood production, wood pulp manufacture and wood distillation will have charge of the work.

The site for the new laboratory was chosen by Gifford Pinchot, chief of the United States Forest Service, after a full consideration of many generous propositions from other institutions throughout the country. He was probably influenced in his decision by the fact that the location offered is close to the centre of the great wooded area which has furnished an immense harvest of white pine. This laboratory will be one of the most important institutions of its kind, and will give the students of the university many valuable lessons in scientific forestry, hitherto unobtainable.

MISS MABEL TALIAFERRO, THE ORIGINAL "POLLY OF THE CIRCUS"

ROUGH ICE, DEEP SNOW AND OPEN LEADS. THE HIGH ICE SHOWN

TWENTY YEARS IN THE ARCTICS

By EDWIN COFFIN

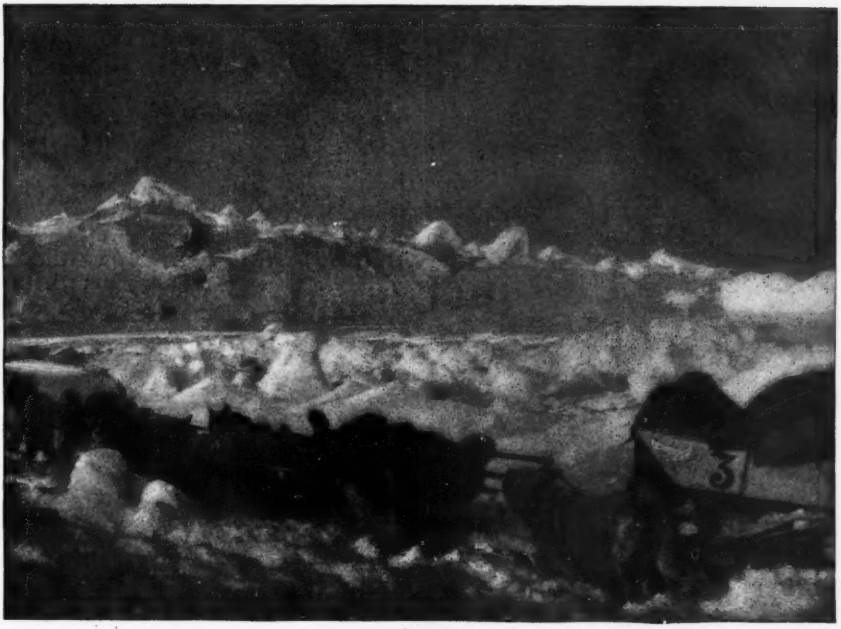
Captain of Steamer "America," Ziegler Polar Expedition

WHEN fifteen years old my first trip to the Arctic regions was made, as a cabin boy on the good ship "Champion." We sailed from Edgartown, Mass., in the middle of August, 1866, rounded Cape Horn and cruised over the whaling grounds of the North Pacific, up through the Behring Sea and straits. We were blessed with the finest kind of weather, and covered many thousand miles of ocean hunting the great "Bowhead" whales, but had no idea of looking for the North Pole.

We remained in Arctic waters for two years, and returned by way of Honolulu about March, 1869. We were very successful on the trip, and brought back a full cargo of bone and oil. On this trip I first met the Eskimos. A party of them came alongside in a canoe, and one climbed on deck, only to be promptly thrown overboard, because these fellows were then considered treacherous, and kept at a distance.

* * * *

My next journey to the far North was in 1881, as third officer of the whaler "Gazelle." We pushed into the Behring Sea through the ice in April. Here we were beset from the 15th of April to the 15th of June—just two months. Well supplied with coal and food, we were comfortable during this time, as there was no dangerous movement of the ice, and our vessel was very strongly built and braced to resist pressure. All this time, we centered our efforts on catching whales,



IN THE PHOTOGRAPH IS IN MOTION SURROUNDED BY WATER

and gave the North Pole no thought; but we learned by experience what it meant to sail among floating ice, to take advantage of the constant opening and closing of the floes, and to foresee, almost instinctively, when some distant but immense force was about to disturb the apparently solid field of ice around us.

During each succeeding year until 1887 I went on one whaling cruise after another. My experiences varied little, for on each cruise we spent much time working through the ice, hunting whales, and meeting with polar conditions among the heavy ice packs, but with no thought of polar exploration.

During the long evenings after supper, three or four sea captains and mates used to get together and gossip on experiences and observations in the northern seas, and of the much-talked-of North Pole, for at that time such men as Kane, Greely, and De Long were drawing the interest of the world in general to the point where all lines of longitude meet.

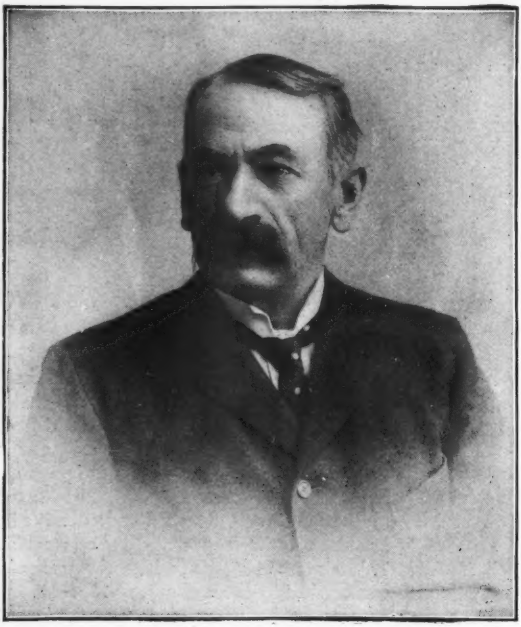
The last-named explorer was then embarked on a polar expedition, and was spending the winter just north of Herald Island, in the latitude of 71° 25′. His choice of this point as a base was very much criticized, for the ice there was in a most unfavorable condition, and afforded no chance of progress. For twenty-one months he drifted with the ice pack northwesterly six hundred miles by a course covering twice that distance, reaching 77° 15′ north, 155° east, where the Jeannette was crushed by the ice on June 13, 1881.

After reaching Thaddeus Island, August 20, his party was divided into three boat crews, one of which was lost in a gale, and De Long himself later starved to death within twenty-five miles of a Siberian settlement.

As we perused the accounts of different expeditions, there was naturally a good deal of discussion on the methods employed by the men who led them, and we all aired our own ideas on the subject. Some thought the trip could be made by sledge, while others held that the glaciers would make a land trip impossible, and that when the Pole was finally reached, it must be by means of a flying machine.

In 1889 I took command of the "Rosario,"

a whaling steamer, and made voyages to the Arctic Sea every subsequent year until 1897. On this last expedition, while in the vicinity of Point Barrow, we attempted to rescue the crew of a steamer that had become wedged in the solid pack ice, and in doing so, we, too, were frozen in. After nineteen days, we worked our way through heavy pack and ground ice that surrounded us, and arrived at our winter quarters on September twenty-second, after sawing through one mile of five-inch ice which had formed between the pack ice and land ice. There were five other vessels near us, and two of these were crushed by the pack and wrecked shortly after the fleet had been frozen in; the remaining three got out safely the next July; but the "Rosario" was farthest north, and during the breaking up of the ice in a terrific southwest gale, we were set upon by an advancing field of ice, and after a shock of exactly six seconds' duration, hardly time enough to think of it, the "Rosario" also suffered complete shipwreck. The stress that was brought to bear upon the ice was six miles away from where the ship lay, but near the ship was the weakest ice so that without warning the ice around us doubled up, telescoping or overriding one cake upon the other until the ship was crushed, and parts of her staunch oak hull ground to the consistency of chaff.



CAPTAIN EDWIN COFFIN
Master of Steamer America of the Ziegler Polar Expedition
Author of "Twenty Years in the Arctics"

We lived in tents on the shore until, later in the season, the United States Revenue Cutter "Bear" was sent for our relief. Four hundred reindeer were also driven overland from Port Clarence by Lieutenant Jarvis, arriving in March after a four months' trip.

It seems to me that the zone of very rough ice that has been encountered by explorers between 82° and 86° north latitude on almost all sides of the Pole, and the much smoother ice found by both Cook and Peary farther north, may be explained by the now well-confirmed fact that little or no land exists north of 83°. The laws of inertia and friction would naturally cause the ice-covered sea about the North Pole to "drag"; that is, causing a current to move about the Pole from east to west, whose southern limits create a zone of very uneven pack ice between the parallels of 82° and 86°. The islands and shoal waters below the eighty-third parallel tend to check this westward current, and with the thicker ice existing northward cause almost continual grinding and breaking up of the great ice floes. The soundings off Point Barrow, as well as north of Asia, reveal a shallow sea, while east of Greenland the soundings show very deep bottoms. This sloping off across the polar seas may have something to do with the movement of ice and currents in the same general direction.

When north of Point Barrow we noticed the velocity of the current, which is often as high as eight knots an hour. The water here is fifty to seventy fathoms deep, and when the grinding and breaking of the ice is going on, the scene is strange and impressive, and the noise almost deafening.

The rise and fall of the tides on Point Barrow is generally supposed to be very great, but in fact in an ordinary way it is scarcely perceptible, being only measurable by inches. These conditions are, however, greatly changed by the southwest wind, which causes a rise and fall of three feet. At Franz Josef Land, in latitude 82° north, the greatest rise and fall of the tide is about two feet, and that would occur only at the full of the moon.

* * * *

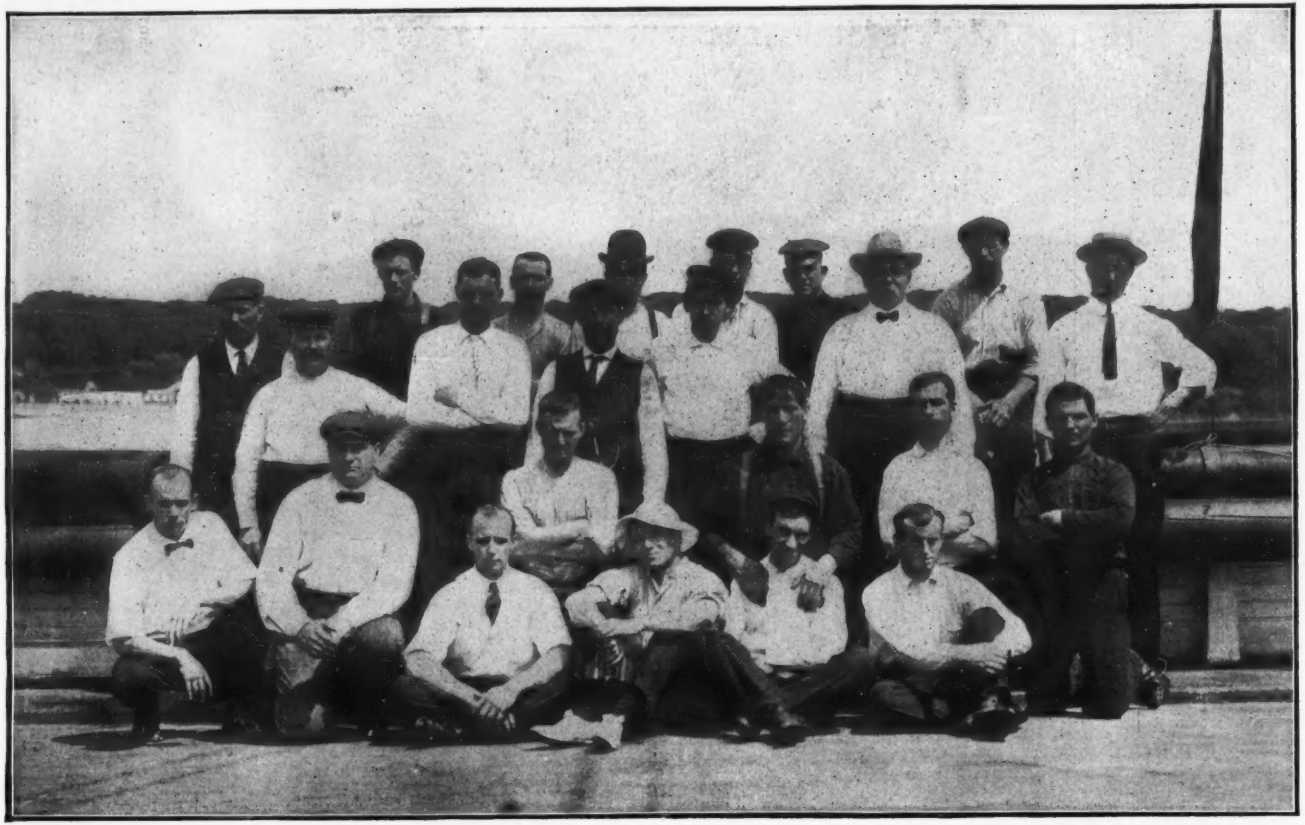
In the spring of 1900 I changed over to the steamer "Corwin," and sailed for the Arctic Ocean to establish a trading station somewhere on the northern shores of Alaska. Although we went on a purely commercial venture, there was a good deal of talk about the Pole during the seven months we spent in the almost continuous sunlight.

Dr. Cook relates instances of seeing mirage above the ice fields—mountains passing in solemn review and sometimes inverted and standing on their peaks—but he goes on to say that there were no forms of life. Mirage is a common sight even in lower latitudes than those mentioned by Dr. Cook. I have seen the spires and domes of well-defined buildings,—whole cities, in fact,—appear above the horizon, sometimes lingering for several minutes; or again, with their towers reaching up higher and higher attenuating apparently to a mere thread. The "Mock Sun" is a common phenomenon in the Behring Sea. On June 2, 1900, perhaps one hundred miles south of St. Lawrence Island, about 9:30 o'clock, and past sunset, the sun was visible as though half an hour high, but appearing as a much flattened oval. Then another sun more nearly round emerged from the horizon beneath the "Goose Egg," rising quite rapidly until it blended with the descending orb. Thereupon, instead of settling below the horizon, the light was quickly dissipated in the air. This phenomenon was probably due to the unequal density of several superimposed stratas of air producing refraction of the sun's rays from below the horizon.

Dr. Cook and Commander Peary both refer to the "purple snows" in the vicinity of the Pole, and the "black vapors" that seem to burst forth like pent-up steam when the fields of ice are rifted. The air is so many degrees colder than the water that it forms a sort of steam, which, in contrast to the clear sky, looks like the smoke of forest fires.

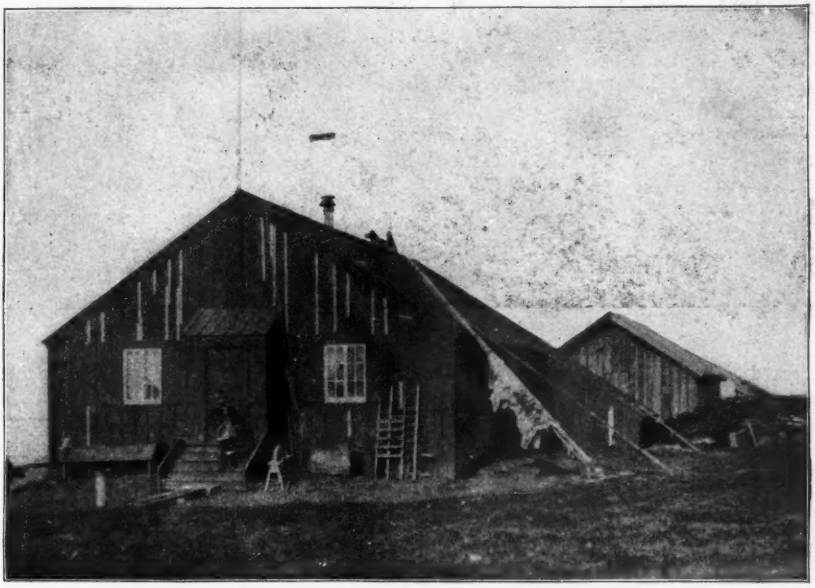
LIEUTENANT ANTHONY FIALA
Who organized the famous Ziegler Expedition; a photographer by trade, he proved an intrepid Polar explorer

The mirage, or refraction of the rays of light, is well known to whalers. I have



CAPTAIN AND CREW OF THE STEAMER "ROOSEVELT." DR. MARVIN, WHO LOST HIS LIFE, IS THIRD FROM LEFT IN BOTTOM ROW

plainly seen ships, which were far away below the horizon, lower their boats, proceed after a whale, and move up to within striking distance of the victim; and I have seen in this phantom way the rush of the whale when wounded, though the ship was "mizzen top down" beyond the horizon. Once, when off Point Leigh we dropped anchor apparently a mile off shore. Lowering a boat, we pulled shoreward for an hour and a half, and then returned to the ship, feeling it useless to seek a shore probably still miles away. This refraction of the rays of light in northern latitudes is likely to cause errors in taking polar observations.

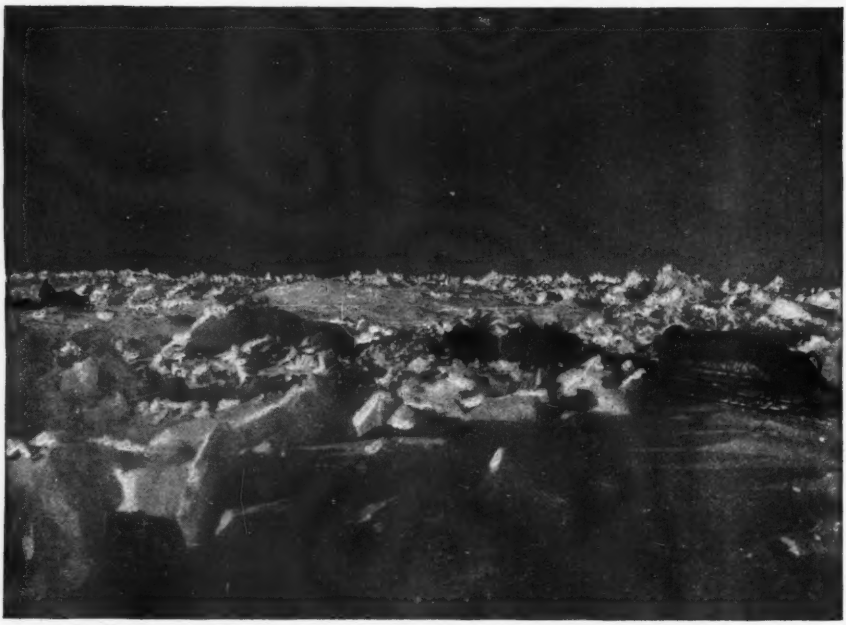


UNITED STATES LIFE SAVING STATION, OR REFUGE, AT CAPE SMYTH
The farthest north of any station in the world—Point Barrow

* * * *

In 1902 the financier Ziegler promoted an expedition in search of the North Pole, and I was employed to go as master of the steamer. I assembled the crew in New York from New England ports, sailing thence to Hamburg, from which point we proceeded to Tromso, Norway, where our ship, the "America," was being fitted out most lavishly for the expedition. Not having all the necessary facilities in Tromso, we were obliged to steam to Trondhjem, where we lay until June 29, loading the vessel, and making preparations. We set sail for Archangel, stopping on the way at Trano Island to take on 120 dogs and several ponies that had been kept there since the Baldwin-Ziegler expedition. At Archangel we loaded the ship with food supplies and many more ponies. The latter were a new experiment in Arctic travel, having never been extensively used before; we expected to kill them when no longer available for transportation, and use them as food for the dogs.

Lieutenant Anthony Fiala joined us as commander of the expedition, and we returned to Vardoe, Norway, to land Mr. Ziegler's private representative and take on more coal. We sailed directly north, and were surrounded by pack ice in latitude seventy-five degrees. We moved eastward from Spitzbergen to Nova Zembla looking for a lead in the ice, or for thin ice that it would be possible to buck through. Being unsuccessful, we steamed back to the most favorable spot we had passed and com-



A SLEDGING PARTY EN ROUTE

menced again to drive the ship northwest through the ice, pushing direct for Franz Josef Land, which was to be our destination. On our way, we were told by the Norwegian sailors in the vicinity that the ice this year was the worst ever known. It seemed impossible to get up farther than seventy-five degrees north, and the temperature kept to the freezing point all through the summer. There was a continuous opening and shutting of the immense ice floes, and it was no small task to choose places through which the ship might pass before the pressure of ice closed in. After forty-three days, we arrived at Cape Flora, the only point in the vicinity of Northbrook Island where we found open water. Here we were continually harassed by breaking ice, and were obliged to wait weeks at a time for floes to separate which would enable us to buck through the ice. The season was cold and backward, and the weather unusually severe, every day being below freezing point.

On August thirtieth we arrived at Rudolf Island, the most northern of the Franz Josef group, and simply a mass of ice and high glaciers where we had planned to spend the winter. While cruising near Northbrooke Island I saw one day from the "crow's-nest," a singular dark body just awash on the surface of the water. As we came nearer and nearer, I was possessed by a rather unusual desire to know what this dark mass was; putting up my glasses, I gave the order for "dead slow," and we passed the object closely on the starboard side. I saw clearly that it was the body of a man clothed in a great skin coat, with the usual hood, and with mittens on the hands. The face was not discernible, but it dawned on me suddenly that this might be the remains of the Swedish balloonist, Andrée, who had been lost in the Arctic about two years before; or, perhaps, one of the men who had been lost in the Abruzzi expedition. I was about to stop the steamer and secure the body when it occurred to me that to take a corpse on board would destroy the good spirit and courage of the members of the polar party; for there is a general superstition among sailors that a ship is doomed when a dead body is on board. The first officer and myself were the only ones who witnessed this ghastly spectacle, and neither mentioned the fact, fearing that the

ON THE ICE OF THE POLAR SEAS

discovery would cast a shadow over the entire party. We have both always believed that this was the body of Andrée, and I have often regretted that it had not been in my power to give him decent burial.

When we reached Rudolf Island, latitude 81°, 46′, some of the party desired that we go farther north to see how the ice "looked," and we steamed through until we reached latitude 82°, 35′. Conditions seemed favorable enough to warrant our going further, but we thought it better to come back to our winter quarters. For fourteen days we were unloading the dogs and the ponies, suffering intensely from the force of the terrific wind. Its velocity reached sixty-two miles an hour, and four of our dogs were carried far to the North on a block of ice that had been broken off from a pack by the force of the wind; they were never recovered.

We built tents for the live stock, and a house from lumber we had brought with us, in which the expedition party was to live through the winter, while the crew and I remained on the ship. This was about the middle of September; we tied up the "America" about a mile from the camp, and in a few days she had frozen in at the edge of the bay ice, which extended from the cape to the southern point of the island. Outside of this point passed the drifting ice fields, interspersed with a few great and many small icebergs.

On October twelfth we saw the last of the sun, and after that devoted most of our time to study and conversation; on the 21st the "America" was blown from her moorings, and went adrift. At this time of year in those latitudes, there is only an hour or so of twilight in which one can see for any distance, and when the ship went adrift, the force of the wind was so terrific that we found it difficult to watch from shipboard. By keeping under half speed, we were able to work back, sometimes amid pack and sometimes "mush" ice, about a foot or two in depth. For three days we drifted, but on the fourth better weather came, and I set the course for the Island. We could not tell—for I was working by "dead reckoning" —whether or not we were going in the right direction; but steaming ahead at full speed—alternating between hope and despair, at about five o'clock in the morning—I sighted

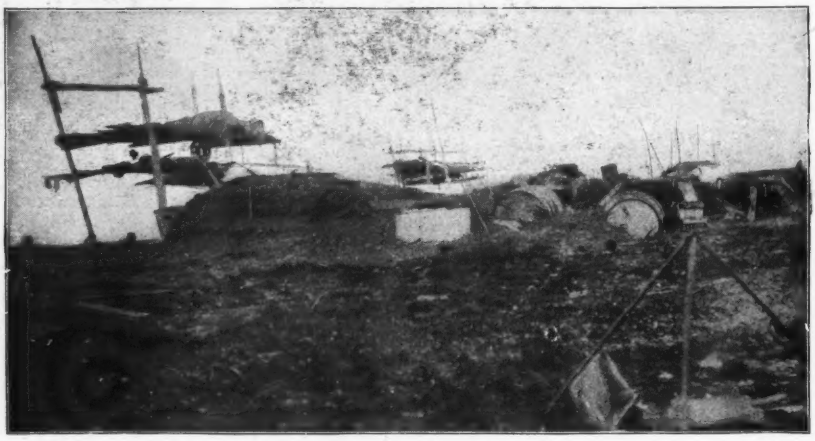
Cape Saulin on Rudolf Island, a short distance north of the expedition camp; we reached the point from which we had drifted without difficulty. The steamer resembled an iceberg, with three masts uplifted, as though protesting against the bitter cold. The party on shore had begun to fear that we were lost, and there was a joyful reunion of all hands when we reached the camp. Those three nights that we were adrift had been a period of awful suspense for those in the camp; for, cut off from the electric wires which ran from shipboard to shore, furnishing them with light, the party would have been in total darkness but for a few candles that they possessed. They knew, of course, that some accident had befallen the ship on account of this connection being broken; while we on board did not realize that we were drifting until we discovered the broken wires and the dynamo racing faster than usual.

The "America" was once more made fast, and lay in the same place until November 23, 1903, when the floes drove in upon that side of the Island and crushed the steamer like an eggshell. Things looked very black for us, for we were of course forced to abandon the ship and live in the house which had been erected for the expedition party. Here we remained during the winter, helping to complete the preparations of the men who were to make the dash to the Pole.

The winter, on the whole, was very comfortable, although we suffered from several minor annoyances. The ponies caused us much anxiety and labor. Their appetites increased as the cold became more intense, and they supplemented their regular meals by eating the posts of the tent in which they were kept, the tin sheathing which covered the woodwork on the sides of their stalls, and made short work of any skins left near them —they devoured everything within reach. We had intended them to be food for the dogs, but they seemed determined to do things *vice versa*.

During a spell of rather favorable weather about the first of March, the selected men started on their dash for the Pole with dogs, ponies and sledges. Before they got out of sight of the Island, it was discovered that several changes would have to be made, and the party turned back. We fitted them out as they wished, making the number smaller, and on the twenty-seventh, arrangements had been completed. After they had journeyed north some distance, they found that they had started too late in the season, and that the icebergs prevented further progress. Half of the sledges were smashed by rough ice work, and, very much discouraged, the expedition returned.

The attempted "dash" had no especial results, except dearly bought information as to the best season for such an effort.



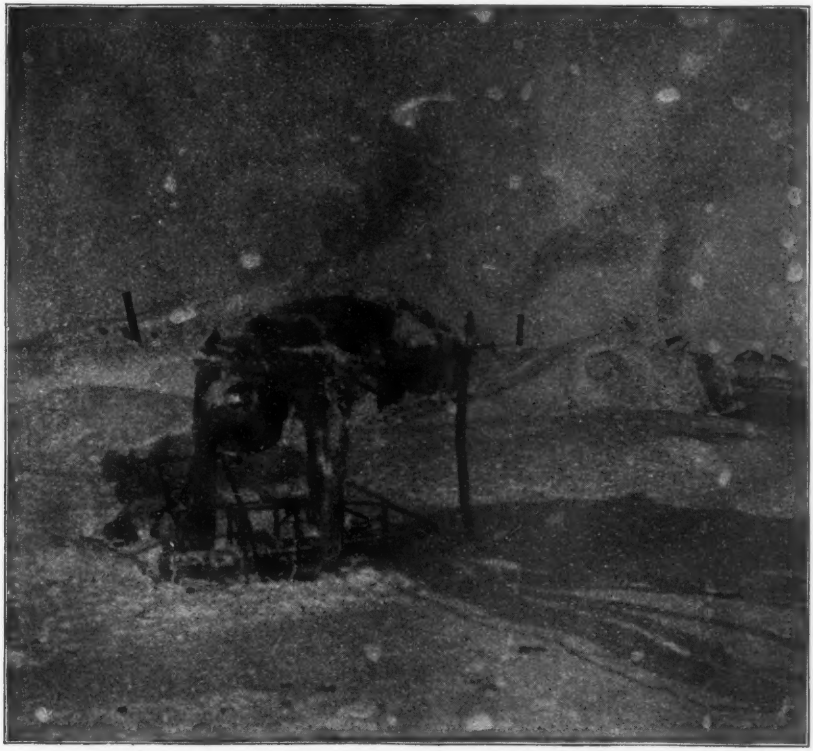
POINT BELCHER
Showing site of winter houses and a station of "caches"

Their experience is strangely out of accord with the recent discovery of the Pole by Cook and Peary. We learned also that ponies may be made almost as useful as dogs on sledges.

In May, 1904, the ship's company made a sledge journey of over 165 miles to Northbrooke Island to meet the relief ship, according to agreement. We left five of the expedition at Rudolf Island; were thirteen days on the trip, and our party of twenty-five remained at Cape Flora until August thirtieth, 1905, living on half rations. Eight of the party belonged to the expedition and lived in a portable house which Abruzzi had left on Cape Flora, to hold his stores; the remaining seventeen, constituting the ship's crew and myself, lived in the log house which, with a small log hut for stores, we also found there on our arrival.

On our way to Cape Flora we passed the hut where Nansen wintered; he also used the log hut that we occupied for sixteen months. I used the chair which had been his when he lived on Northbrook Island, and often read his initials cut in it. While in Tromso, Norway, I had the pleasure of twice meeting with Nansen's mate, Johansen.

The house we occupied on Cape Flora had been double roofed with inch boards, lapped over each other, the joints being carefully matched. These boards had since been blown together in such a way that they looked as though piled up by a human hand, though we knew that no mortal had been there. This was the work of the high winds—in fact, a heavy gale was blowing when we arrived on Cape Flora. On the floor inside were about eight



VILLAGE OF POINT BARROW
Farthest north town in North America. Photograph taken during a snowstorm

inches of ice, packed solid and frozen in. The three windows were all out, but the storm porch still protected the door. A large quantity of snow had blown in through the open window spaces, and with the leaking of the roof had produced the ice on the floor, the atmosphere inside the house never being warm enough to produce a thaw. Had we reached there a few years later, we probably could not have cleared out the ice, as it would have completely filled the hut; but now we set to, dug it out and repaired the roof as quickly as possible. While this was being done we lived in tents for about two weeks; the house then being fairly dry, the men moved in, but several of us remained in the tents until they blew down, when I concluded it was time for us all to get under a roof of a more solid description.

A HAPPY SUMMER GROUP OF ESKIMOS
In full American garb

Just after we lost the sun, I resorted to a little pond in front of the house. Here the ice had frozen to a thickness of about six inches, and I had it cut out in blocks which exactly fitted our windows, so if we had not an ice palace for the winter, we had excellent ice shutters. Then we took snow and mixed it with water to plaster up all crevices, thus keeping out the air and wind. It would have been impossible to live in the house if this had not been done, as the warmth inside would have counteracted the effects of frost outside, producing apertures permitting the frosty air to enter freely. Then we pursued the well-known Arctic plan of banking up our house thoroughly with snow, level with the roof, and about six feet thick. The roof was like that of a shed and had a very slight pitch. The house was built on the plan common in the severe climate of northern Russia. Not even a blizzard going at a rate of eighty or a hundred miles an hour could penetrate that snow wall. It also acted as a sound barrier, and soon we were buried in a silence like that of the grave. The portable house occupied by the eight members of the expedition party, was never so comfortable as ours.

Knowing that air would be essential oncewe got all banked up, I inserted a 20-inch-square ventilator through the roof. With our two stoves, one for heating and the other for cooking purposes, the temperature of our house during the day was about fifty degrees, and even in the coldest weather seldom dropped to anything lower than twenty degrees above zero.

The house was built for six, our party was seventeen, therefore our quarters were rather narrow.

A snow house with only a small ventilator and no artificial heat, will not go more than two or three degrees below freezing point, which accounts for the fact that the Eskimos are able to preserve life without such means of heating as those we use.

On reaching the winter quarters, the first thing to look after was a supply of fuel, and in this we were very fortunate, discovering a coal vein about 600 feet up the side of a steep hill. It was very difficult of access, but its position prevented its being covered with ice and snow, as it would if located on the level. We cut the coal out with our axes

A QUARTETTE OF ESKIMO GIRLS

and ice shovels, and were glad to find the coal very good. A climb of fifteen or twenty minutes was necessary to reach the place where digging was possible, but we managed to secure in all about twenty tons. Of course, it was all frozen and the digging was hard work, but it gave us occupation during the summer months, and we made all the speed possible, knowing that later the snow would cover the coal faster than we could take it out. We had also found some drift-wood which served as kindling and proved useful, but alone would have been a poor defence against the Arctic cold. We were lucky in finding a layer of clay, the best I have ever seen in any land. It proved useful in fixing our stoves. In these northern countries, all the minerals are well represented, but it is difficult to get at them and the wealth of those lands has remained hidden for thousands of years.

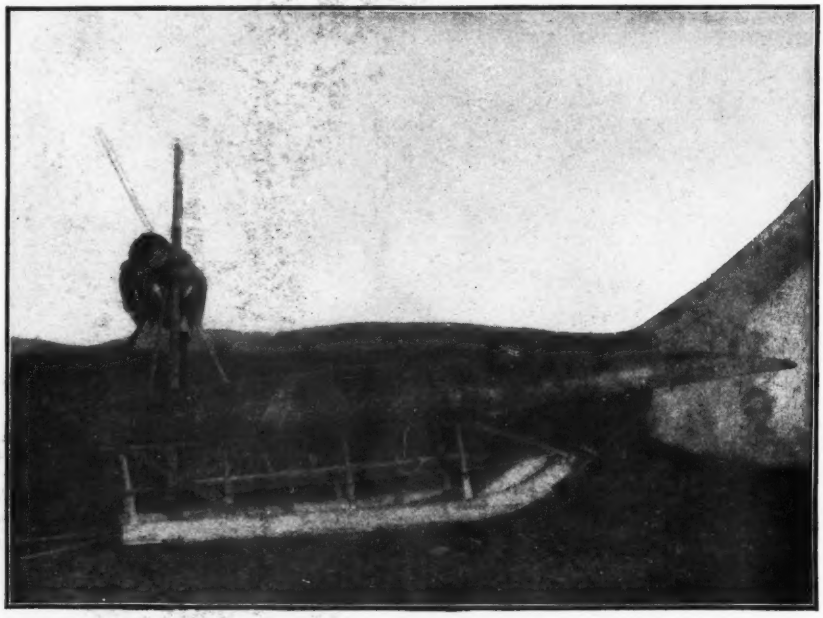
Later on when the daylight came back,

we made excursions up the hill in search of fossils, which were quite abundant; I have given away many of those I collected, but still have twenty-five or thirty good specimens. One of the things which I secured was a large nautilus shell, such as is supposed to exist only in tropical countries; I found it 600 feet above the water level. Such specimens clearly prove the volcanic upheaval of this soil, and further show that the climate must at one time have been very different from what it now is. In some of the shells the petrified organisms can be discerned, as though the process took place very rapidly. During the summer, I also found the skeleton of a Right whale, a species that rarely goes higher than sixty degrees; but I found it at eighty-two degrees and on land. It was in a sort of ravine where the water and ice had passed over it, and the whalebone was worn to long threads and strings, showing that it must have been there many years; the traces of friction showed plainly on the whole skeleton.

* * * *

During the months of light, we had hunted all we could,—walrus, seal and bear chiefly; having at the time we left Rudolf Island only two and a half months rations. We made every effort to provide for the long night which we knew would soon be upon us. I had spent many such nights in those latitudes and knew what to expect.

We took in all, eleven walrus and a number of seal, and removing the greater part of the fat, we tried it out, taking such parts as we could spare from what we needed for the support of our fifteen dogs, which we felt obliged to keep. In this way we got oil for lighting purposes, and the wicks we made as best we could from cotton or anything else that we could use. Our Norwegian engineer proved the most useful man in camp at this time, helping to get the stoves into good order and making lamps with some solder that we had with us. The lamp chimneys were made from glass bottles; I had two or three real chimneys but they soon got broken. We also had some wood alcohol and a little kerosene, enough for one small lamp that I had reserved for my own use. These lights did little more than produce a

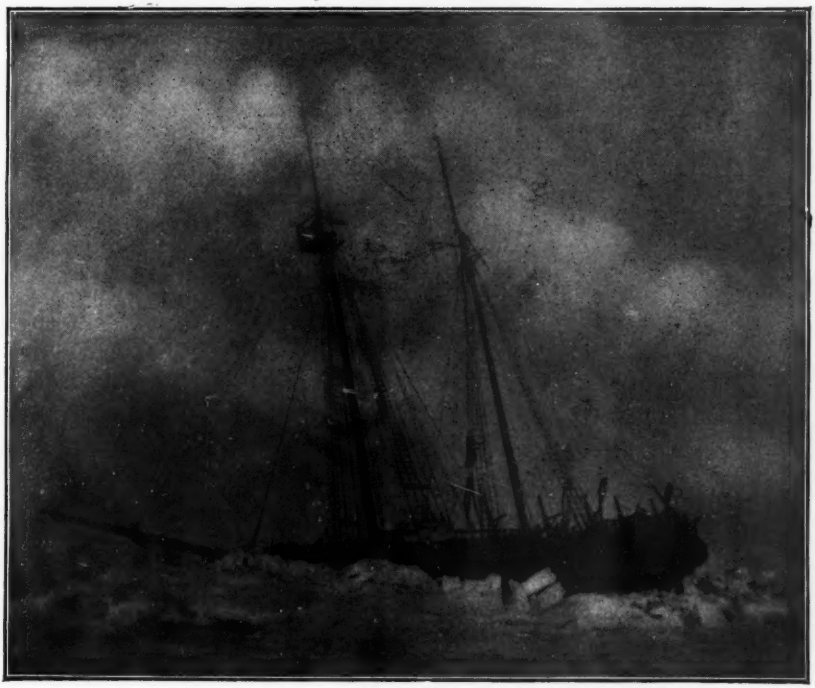


A "CACHE" ON POLES, AND REGULAR ESKIMO SLEDGE

faint illumination, not possible to work by at a distance of three or four feet.

After the darkness shut us in, we began to find the time hang heavy. Some of the men played cards, some mended their clothes, soled or otherwise repaired their shoes, for we had all sorts of supplies with us, and found a good many more among the Abruzzi stores. On one pair of shoes I put three different pair of soles. On an old ash heap I found a pair of new soles with no trace of the uppers, and I seized upon them as a treasure, transferring the uppers of my own shoes to them from the wornout soles that had become almost useless. We suffered from the lack of footwear, though we manufactured it as well as we could from sealskin, which we had dried and tanned to the best of our ability; we never produced anything very satisfactory in this line, and it prevented our taking exercise as we otherwise might have done.

There was no special observance of Sunday by our party, except in the fact that it was the day I selected for distribution of rations, which I carefully weighed and gave out in equal portions. The food consisted of hard tack, sugar, butter, tinned meats and condensed milk at first, though later we were reduced from this comparative luxury to hard tack and butter, and even of those, I felt obliged to be careful, for there was no knowing that we might not yet have to face another winter on that deserted, ice-covered island. Although we all hoped for a relief ship the next summer—1904, as promised, I felt sure that it would not come, chiefly owing to conditions of the ice when we came in. Had we remained the third year, the party would have been very small, as it is difficult to show a good health bill, tucked into small quarters and on short rations, and with little or no exercise. We did not depend entirely on our stores, but used some seal and



THE "ROSARIO" NORTH OF POINT BARROW, IN 1898
Taken in the spring, after wintering in good shape

walrus meat. It has been commonly supposed that scurvy results from a diet of salt meat, but fresh meat is equally dangerous, and some vegetable substance must be added to sustain health. Some weeks we had, including the meat, about three-quarters fare for our men; on the whole, our health bill was fairly good, considering the many drawbacks.

We did not hesitate to take advantage of the cache made by Abruzzi on Cape Flora, knowing that the Duke was safe in warmer climes; for it is polar etiquette that the first hungry party that finds a cache, is at liberty to take the supplies. Such action has always been regarded as perfectly lawful and proper, because the food is taken to sustain life,and, as in our own case, they are ready to make good if they ever get out alive. In addition to the canned meats left by the Abruzzi expedition, there was some which an English party had cached.

Photo by Brown Brothers, New York

LATEST PHOTOGRAPH OF MRS. FREDERICK A. COOK AND HER DAUGHTERS, RUTH AND HELEN

We soon ran out of coffee, but the tea hung on; it was unlike any tea we had ever tasted, and was not regarded with favor. Then the sugar and canned milk gave out, and the only rations were four pounds of hard tack and thirteen ounces of butter per week to each man. Everything was kept locked in the storehouse, the men being always hungry. We were all the time on short rations and no one ever had a square meal; self-preservation being a strong instinct in human nature, there was some danger that a few might quickly eat up all that we had, leaving the entire party to starve. The chief officer had charge, but I had the supervision and saw that no one man got more food than another, and supplies were securely always guarded.

Perhaps where our lack of rations pressed hardest, was in July, 1904, when our tobacco was used up. We all loved to smoke, and the men would try any substitute. A man named Smith had come to the island at one time in a yacht, which had been wrecked close to the place where our house stood. Some of his life preservers remained; they were filled with a substance which I believe to be corn silk, and some of the men tried to smoke this; it would not work, though they mixed with it all kinds of wood. One of the party, a Norwegian, took a sort of tarry substance, cut up bits of oakum and mixed the two together with wood alcohol; allowing it to burn about two-thirds, he tried to smoke his improvised cigar; he was a sick and sorry man that day.

I had a dog skin robe large enough to double over four times; it made a good bed, warm and soft. We removed all partitions from the middle of the house, substituting our berths to avoid the frosty walls. It was my habit to smoke in my comfortable berth and naturally scraps of tobacco became scattered through the robe, sticking in the long hair. It was rather amusing to see one of my men spend hours picking away at

the dog skin to secure enough of the coveted "weed" to make two or three cigarettes. If I had been possessed of sufficient business enterprise to take advantage of his necessity, I might have accepted his offer and become owner of all he possessed in return for granting him the privilege of searching my fur robe for these morsels of tobacco.

One of the sailors, a new arrival at our camp, made a trade with a young fellow who gave up his whole allowance of butter for enough tobacco to make one cigarette a day; when a man has only hard tack and butter to eat, he has to be pretty fond of tobacco to willingly part with the best part of his rations for it.

Before the long night came on I had owned several pounds of tobacco and when the supply gave out, and the men began to be hungry for tobacco I was tempted to hide mine and keep quiet about it. Having been a confirmed smoker for thirty-seven years I rather wondered how I should get along without my smoke. It was a fine opportunity to test one's will power. After I had made up my mind to do without tobacco and had parted with my private supply, I occasionally had a curious sensation of having mislaid something—I would feel a sudden lack without knowing what I missed—then it would occur to me, "I want a smoke." I might not feel the impulse again for half a day, and this continued for a short time but at last the desire for tobacco dropped entirely from me and I never craved for tobacco afterwards. In April the year following our first summer on the island we got some tobacco from another camp. The supply reached us about two o'clock in the afternoon, and there was much rejoicing among many of the men who would rather go hungry than miss their smoke. I felt rather strong-minded and said I did not know whether I cared to smoke again or not. Pipes were peacefully puffing all around me; the odor of the tobacco filled the air, and at last I said,

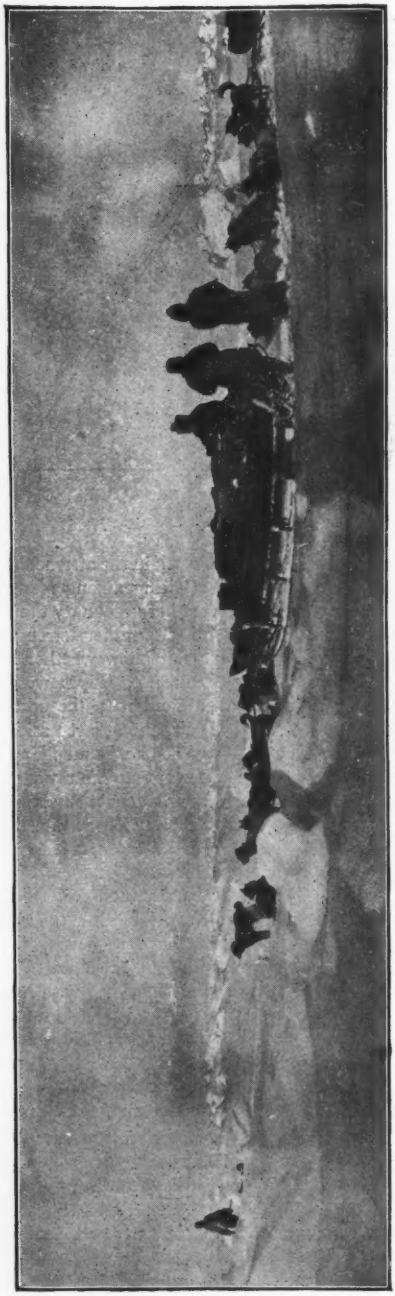
VIEW OF ARCTIC ICE FIELDS FROM CROW'S NEST OF STEAMER "CORWIN"

"Well, I guess I will smoke," and filling my pipe I started. To my surprise when I had smoked about a quarter of it I felt as though I had enough. We had a little parade ground, about five or six hundred yards, where we could walk. I stepped out into the air where the cliff comes down with a drop of about 1,200 feet. I was as dizzy as a boy with his "very first cigar" and could not walk straight. That quarter pipe had gone to my head as no tobacco has ever done.

STEAMER "CORWIN" GETTING READY TO "BUCK" ICE

* * * *

I shall never forget the radiance of those polar moons; owing to the previous darkness and the masses of snow, the moonlight seemed much brighter than at home; the regular rising and setting of the moon was an event eagerly looked for in the monotony of our polar life.



PICKING OUT A TRAIL WHILE THE MAIN COLUMN IS ON THE HALT

Copyright 1906 by A. Fiala

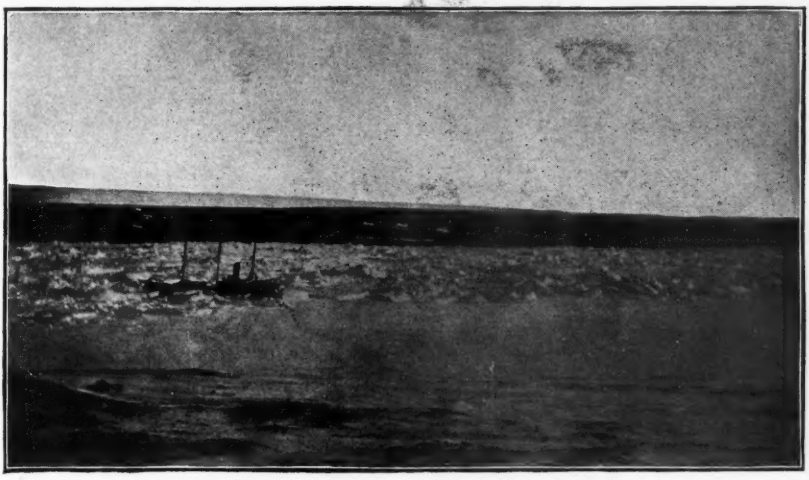
At last the darkness began to lift and the air grew warmer, but the thaw brought grave consequences to us; the house leaked badly where we had plastered it with ice and snow; we would have moved out and lived in tents but that the wetness of the ground would have made it worse outside than it was in.

At this time we thought to vary our diet a little. The birds returned, the loons and the little hawks; this was before the snow began to disappear; what a pleasure it was to look out and see the feathered creatures alighting on the cliffs. They come to these regions to lay and breed, as soon as the snow blows off. They make no effort at nest building but lay the eggs on the bare rocks, at heights varying from seventy-five, to six or seven hundred feet; they rarely lay more than two eggs. In May, at the risk of our lives, we got a few by hard climbing. One of the sailors mounted on a spliced rope ladder, and being tired with his exertions he sat down to have a smoke. He had just "lighted up" when a rock knocked the pipe from behind his teeth, and the blow stunned him for a few minutes; these masses of loosened rock were falling all the time, and egg gathering was a dangerous business. I got about a dozen and a half myself and in all, our party collected from one hundred and fifty to two hundred. While the eggs tasted good to us, I am not sure that an epicure would enjoy them. In order to work off the fishy flavor we had to boil them twenty minutes; if cooked four or five minutes like an ordinary egg they were leathery and peculiar in flavor. They are about half as large again as a hen egg. These loons have a bill like a crow and are the same as the black backed Arctic loon found in Alaska.

When possible I sent sailing parties out every day with rifles in search of bear. We had, of course, guarded our ammunition carefully, having it all in tins, but even with the addition of bear meat the men continued to feel the pangs of hunger, and I have seen them take walrus meat, condemned during the first year as unfit for our own use and apportioned to the dogs, and eat it raw. I found a cave which they had dug to bury the meat, that they might get out and devour just as it was. During those months of short rations I would cheerfully have paid one hun-

dred dollars for a bowl of bread and milk; we had an opportunity to learn the worthlessness of gold, for while we had money in plenty it was of no use to us.

The dim lights in our house had merely made darkness visible, and the scarcity and lack of variety in food, and the peculiar mixtures that the men had smoked had told on their health. That was a strange experience when the light grew and grew, and we all went outside under the brightening sky and gazed into each other's faces; there were two or three of my men who looked to me like perfect strangers. Up there, in the solitude of the white North, qualities hidden



THE ROOSEVELT STUCK IN THE ICE
Farthest point north reached by any ship in the history of Polar Expeditions

in a man, and never suspected, come out as they never would in civilized life; there had been times when we seemed almost to hate each other in the deadly monotony of those dark months. Often I had looked around and wondered what thoughts occupied the minds of my companions; and when the light came the traces of those melancholy thoughts, and the lines of privation and hardship, the growth of beards, and the lack of exercise had so changed the expression of their faces that I doubt if the men's dearest friends would have known them; their voices alone were familiar.

I kept a regular diary all the time, and when the sun came back I took observations every day, recording the latitude and longitude and working out problems showing the Polar latitude to a date which I assumed. Our chief dependence was placed on our chronometer watches, and those faithful little instruments determined longitude. Many memories are bound up with the tiny wheels of my watch, for I still carry the one which went through the Arctic cruise with me and helped so often to determine the position of our party.

On March 10, 1905, I started on a sledge trip to travel seventy-six miles toward the north and east, where we knew provisions had been cached by the former Baldwin-Ziegler expedition. We had a fine dog team, fresh and in good condition. Our sledges were of the best and very light in weight; the men were picked, being our quarter master and first assistant engineer, and they knew that ahead of them was a supply of food they had craved for during the months of starvation. They had every inducement to make the best possible speed, yet they required seven days to make that seventy-six miles. Such records as this seem to contradict the remarkable speed registered by both Cook and Peary, and at variance with the experience of all other explorers.

Arriving at the cache, the men found there two members of the expedition, who had

come from the North; they got what provisions they needed, including a little flour and some meal, and two cases of condensed milk. When these supplies came to our log house we had food that seemed to us fit for an emperor, and to this day I never have tasted anything quite so good as that first meal; we also had some dried prunes and apricots which we regarded as the height of luxury.

monotony and anxiety that were upcn us day after day; we watched a moment and wondered which of us would be the next to go off his balance. When we went to him and saw what he saw, the long-looked-for relief ship, I don't know whether we all jumped for joy or what we did, for we have no memory of our actions in that hour. Quickly each man gathered his little kit,

Photo by Brown Brothers, New York

MRS. PEARY AND HER TWO CHILDREN

The daughter was born at Etah, Greenland. She enjoys the distinction of being born farthest north of any white person now living

The flour was not of much use, because we had nothing to raise it with and our butter being too valuable to use for cooking.

Very often during the months of daylight we stood on the cliff straining our eyes to see the longed for relief ship; as the summer of 1905 slipped on we almost despaired, but one day in July when hope had almost abandoned us, we saw one of the boys jumping up and down and supposed that at last his brain had given way under the strain. In fact, many of us were almost crazy with the

ready to rush to the boats and leave forever that island where death had stared us in the face for sixteen months, and where we had almost given up all hope of ever again looking upon the face of our loved ones. In our frantic haste to be gone, many of us left behind relics and records which we prized and later regretted the loss of. At the end of sixteen months, the relief ship "Terra Nova" had arrived, and we steamed to Norway, where our party divided, some going to London, and others to Germany.

In March of that year, 1905, Lieutenant Fiala, at the expedition party's quarters, attempted another dash to the Pole. He cut through the ice to a distance of thirty miles north of Rudolf Island. It took sixteen days to traverse these thirty miles, and those who went ridiculed the idea that they could have cut through even a yard further, for the pressure ridges and rough ice so closed the way that every step was taken at the risk of the whole party.

* * *

Many people have asked me if observations brought home by Arctic explorers are perfectly reliable and are proof that they have really been where they claim. The fact is, that a man experienced in polar exploration could, in a few hours, make out observations apparently showing that he had traveled hundreds of miles by sledge over the ice, having all his incidents and his latilude and longitude so that even an expert might find it difficult to discover that these records had been prepared while the writer was seated in a comfortable chair at his own fireside.

Many questions are asked regarding those peculiar tribes, the Eskimo. Some of the tribes are unreliable in regard to property, stealing without hesitation, but many are so strictly honest that I have known them to bring to the camp a rusty nail which they happened to pick up nearby. But honest and dishonest Eskimos alike have absolutely no idea of the difference between truth and falsehood. It seems that in this particular their conscience is absolutely untrained, and one learns that they consider wrong doing only as it brings punishment, as in stealing, which would naturally be resented. They are a people who are always anxious to please and have an innate tendency to say the thing most likely to be satisfactory to the person who questions them. In polar expeditions the best guarantee of the truth is the personal character of the man who makes the statements. It seems to me that to secure satisfying evidence of the finding of the North Pole it would be necessary to have the corroboration of these reliable men, who would say that they had gone across the pole, toward the south until the compass turned, and checked in other directions. If one may judge by the latest accounts of Polar expeditions, it would seem that soon we shall be able to pile a few foot warmers and some fur robes into an automobile and reach the Pole in a real twentieth century dash, consuming only a few hours, enjoying all modern comforts and conveniences.

I shall never forget those apparently impassable fields of ice, and to me the discovery of the Pole is somewhat of a disappointment. It seems as though some greater secret must be hidden amid those swirling black waters and gleaming ice floes and bergs with their weird charm.

Polar life brings strange revelations; a man who is a model of amiability at home is a savage in those high latitudes, where Mother Nature and humanity seem bent on revealing their crudest characteristics. When a man goes to the Arctics first he dislikes it; if he is caught there one winter he vows to himself that he will never repeat the adventure. Yet when he gets back home, he discovers that the "white silence" has a compelling fascination. I have never known a man who could resist the chance to go again, even at a financial loss. After twenty years of experience, if another opportunity came to me, it is doubtful whether any consideration would prevent my taking up the work again.

Once the charm of those long months of daylight, the mysterious, deathly silence of those long nights, the white glare of that brilliant moonlight across trackless wastes of snow and ice, has been felt, a man is unable to resist the siren call of the North, that has become more to him than family, home, friends or money. Gladly he takes his life in his hands and fares forth again into those frozen seas.

EDITOR'S NOTE.—The articles by Captain Edwin Coffin, commanding the steamer "America" in the Ziegler Arctic expedition, are the most interesting given to the world for some years, being the actual, personal experience of one of the best-known American Arctic navigators.

It was a great pleasure to hear Captain Coffin relate a story full of thrilling experiences, having the charm of a tale of personal adventure, which we have tried to transfer to the printed page. Almost a quarter century spent in sailing the northern seas, from boyhood to the prime of life, has given the narrator a knowledge of these frozen regions and their perils that makes the article an authoritative utterance on polar matters. Captain Coffin is one of that sturdy class of American whalemen whose seamanship is equalled by their knowledge of all that is necessary to sustain life and secure the greatest possible comfort for a party wrecked and frozen in amid the polar solitudes. His story is alive with graphic description of incidents that preluded a dash for the pole that was as historic as even the actual finding of that coveted point of the world's surface.

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ROUGH ICE AND DEEP SNOW—HARD SLEDDING. THE PHOTOGRAPH CHARACTER OF THE TRAIL, WHICH

BLAZING THE POLAR PATHWAY

By CAPT. C. W. HALL

FOR many centuries, the boldest of earth's bold mariners have steered galley, ship and steamer into the ice-pack of the northern seas, to be overwhelmed by storms, crushed by irresistible, wind-driven ice-fields, smothered by blizzards, slain by wild beasts, frozen to death by the fireless hearth, killed by starvation in the long, dark winter, or rotted into the grave inch by inch with scurvy.

Between the days of Cabot, in 1496, to those of McClintock in 1858, no less than one hundred and thirty explorations into the Arctic solitudes are recorded, and since that date governmental and private enterprise have greatly increased the number. It is even claimed that Homer knew that the Northern solitudes, wherein the Cimmerians lived in gloomy darkness, were also illuminated for long periods by a sun that knew no daily rising and setting as in more temperate climes; and that through nightless day and dayless night, immense reefs and cliffs floated from place to place. The fabled voyage of the Argonauts, the reported sea journey of Pytheas, a Greek navigator, from Marseilles in 384 B. C., the writings of Aristotle 350 B. C., Pliny, A. D. 25, Tacitus and Ptolemy A. D. 20, all agree to show that men had penetrated into or nearly to the Arctic Circle, and that its peculiar phenomena were known to the ancients.

Othero, the Norse viking, related to King Alfred of England, in the ninth century, how he voyaged beyond the North Cape, crossing the White Sea to Bjarna-land, whence he and his companions returned with the spoils of threescore walruses.

GIVES BUT A FAINT IDEA OF THE STEEP SLOPES AND BROKEN IMPEDES TRAVEL IN THE ARCTICS

The discovery of America by Columbus, and his delusion that he had reached large islands lying east of India, led to a general belief in a northwest passage around America to Asia; which even into the 19th century was the chief inducement to Arctic exploration. John Cabot (1496) followed the American shores to latitude 56° N. Gaspar Cortereal, a Portuguese (1500) ran up the Labrador coast to latitude 60° N. In 1527, under Henry VIII, the *Dominus Vobiscum* and another ship, under captains whose names are forever lost to the world, somewhat exceeded Cortereal's latitude; and one of these ships was lost southwest of Greenland. The *Trinitie* and *Minion* in 1536 sailed from London on this quest with sixty in company, thirty of them gentlemen; but these in Newfoundland became so short of food that one man killed another and ate part of his flesh, before the party were relieved by falling in with a French fisherman.

In 1553, Sir Hugh Willoughby, with the *Buona Esperanzo*, *Edward Bonadventure* and *Bona Confidentia*, one hundred and thirteen officers, men and passengers, set out to sail north of Europe and Asia to India. Willoughy, with all the people of the flagship and the *Bona Confidentia*, seventy persons in all, perished of cold and hunger in Eastern Lapland during the winter, but no record of the details of their last days was ever found. Captain Richard Chancelor, in the *Edward Buonaventura* reached the northern coast of Russia, "where he found no night at all," and was so honored by the Russian king, Juan Vasilovitch, that he visited Moscow and arranged for commercial relations of the greatest value to England. In 1556, Steven Burroughs, seeking the Northeast passage, in the pinnace Serchthrift, exceeded latitude 70° N., and saw Nova Zembla.

In 1576, Martin Frobisher, with the *Gabriel* of thirty-five, the *Michael* of thirty tons, and a ten ton pinnace, sailed in quest of the Northwest Passage, but barely reached 61° N. He was sent out in 1577 to load with ores, and in 1578 Frobisher with fifteen vessels sailed to establish a colony but lost a ship and forty men and so returned.

Sir Humphrey Gilbert in 1583 was turned

back by the ice in latitude 60° N., visited St. John's, Newfoundland, lost the *Delight* with nearly a hundred men off Sable Island and went down in the little ten-ton *Squirrel* on his return.

John Davis (1585) attained 66° 40′ N., discovered Cumberland Island and met the Esquimaux; he coasted West Greenland

LIEUTENANT SHACKLETON
The English explorer, who reached farthest point South

Island in 1586, to 66° 33′ N, and in 1587 broke all previous records, reaching latitude 73° N.

William Barentz (1591) with three Dutch ships, seeking the northeast passage, reached Williams Island 75° 55′ N. A second voyage in 1595 made no farther progress and lost two men, taken out of a large group of voyagers and slain by two white bears. In 1596, he reached Hakluyt Head in latitude 76°15′ N, but in returning his ship was crushed by the ice and after a dreary winter the crew set out in boats, carrying Barentz and Claes Adriansen, both of whom died June 26, 1597. At Cola the survivors found Captain Cornelius Ryp, who had sailed to 80° N., having probably circumnavigated Nova Zembla. It is said that an English pilot, William Adams, afterwards wrecked on Japan, and not allowed to leave the country, informed an embassy that he was pilot on this voyage and that his calculations gave the highest latitude at 82° N.

During the last century the site of the winter quarters of Barentz was discovered, and many of the articles left behind recovered, including several depicted in the curious woodcuts which liberally illustrated the Dutch volume in which the voyages of Barentz were published. These relics, after the lapse of nearly three centuries, were presented to the Dutch government and are carefully preserved.

James Hall, an English pilot in the Danish service, under Admiral Lindeman, made Greenland voyages in 1605, 1606 and 1607, but beyond exploring a little, fighting with and carrying away some of the natives and looking for mines of gold and silver, accomplished nothing. In 1606 John Knight made the coast of Labrador about latitude 57° N. but lost his rudder and landing with four others never returned. The survivors were attacked by the natives and gave up the voyage.

Henry Hudson, with only ten men and a boy, sailed from England in 1607, made the east coast of Greenland, in latitude 73° N., sailed northeast and made Spitzbergen in latitude 78° N. and penetrated the ice to latitude 82° 23′ N. In 1608 he attempted the Northeast passage and passing the North Cape stood northeast to latitude 75° 29′ N. but was again stopped by the ice, and after landing in Nova Zembla returned to England. On a third voyage (1609) he was employed by the Dutch and visited America, discovering the Hudson River. In 1610, he again attempted the Northwest Passage in the *Discovery*, fitted sparsely by English gentlemen for a six months' voyage. It was nearly three months before she cleared the ice in Frobisher's Straits, and a month before she passed into Hudson Bay, where in November they were frozen in, but had for some time great supplies of game. In June, 1610, when very short of provisions,

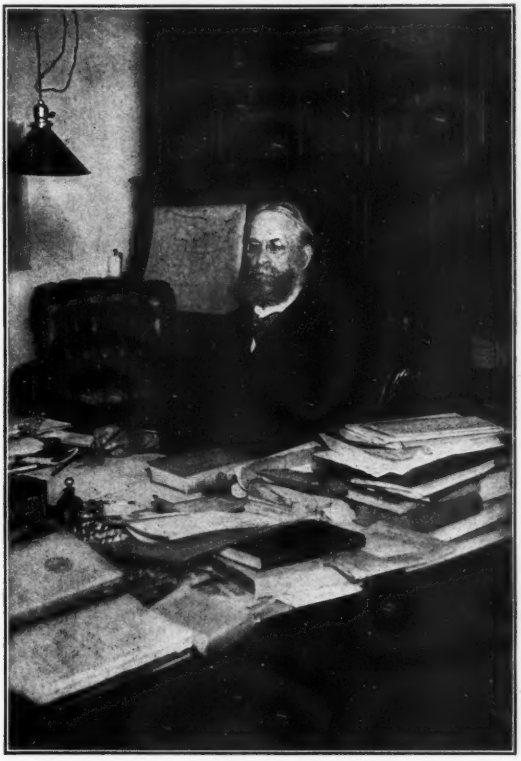
the crew mutinied and put Hudson, his son and seven others into a small boat, with a few articles and a little meal, and left them amid the floating ice to perish. Robert Ivet of the mutinous crew died of starvation on the passage home, but the others were rescued when almost dead.

In 1612, Sir Thomas Button, with the *Resolution* and *Discovery* wintered at Nelson's River, now Fort York, and surveyed Hudson Bay thoroughly. In 1612, James Hall made a second voyage to Greenland where, while visiting Ramelsfiord, some forty Esquimaux came down to barter, but on seeing Captain Hall one of them transfixed him with a dart through the liver, of which wound two days later he died. No violence being offered to anyone else, it was believed by Baffin that it was remembered that he had piloted the Danes who in 1607 had carried off five natives and killed a great number.

In 1615, Robert Bylot and William Baffin explored Resolution and other islands but found no thoroughfare to the northwest. In 1616, in the *Discovery* they reached Sanderson's Hope, between 72° and 73° N.; then cruised north to Cape Dudley Digges, latitude 76° 35′ N., and Hakluyt Island and Smith's Sound in 78° N. Standing southwest they charted and named Jones and Lancaster Sounds.

In 1603, Stephen Bennett, fitted out by Francis Cherie for Cola, Lapland, landed on the Bear Island of Barentz, which he renamed Cherie, or Cherry Island, where in 1604 he hunted walrus to great profit. The Muscovy Company, in 1610, sent Jonas Poole in the ship *Amitie*, seventy tons, to sail toward the North Pole. He visited and named Horn Sound in Spitzbergen, in 78° 37′, named an island Fair Foreland, and in 79° 50′, his farthest northing, found a headland, Gurnard's Nose. In 1611, in the *Elizabeth* he reached 80° N. and in 1612, at Spitzbergen, met Captain Thomas Marmaduke of Hull in the ship *Hopewell*, which afterward sailed north—it was said—to 82°, the highest latitude then reached.

In 1619 Christian IV. of Denmark sent Jens Munk to seek the Northwest Passage; he explored Hudson Bay, changing all the names to Dutch. He wintered in Chesterfield or Bowden's Inlet but appears to have taken no precautions against the intense cold in making his huts. Scurvy set in and of sixty-four souls only Jens Munk and two others survived in May, 1620. These finally gained strength enough to take the smaller vessel back to Europe.



GENERAL ADOLPHUS W. GREELY

In 1631, Captain Luke Fox sailed in the pinnace *Charles*, surveyed Hudson Bay, the northeastern coast of America beyond it and Southampton Island. Captain Thomas James, in the *Maria*, the same year, ran

ashore in Hudson Bay, but got off again and reached Charlton Island, where they wintered. Here they suffered much with scurvy, and having lost three men, and found their way blocked with ice, returned to England. In 1652, Captain Danell was sent by Frederick III of Denmark to visit Eastern Greenland. Twice in that year and again in 1653, he cruised up and down the coast, covering it all the way from Cape Farewell to Herjolfsness in 64° N., but everywhere the ice blockaded the coast from twenty to fifty miles out to sea.

In 1668 Captain de Grosseliez set out from

DR. MARVIN
Member of the Peary party who lost his life

Quebec for Hudson Bay and near Nelson's Bay found a hut containing half a dozen Englishmen who had been put ashore by a Boston ship to look for a harbor for the winter. The French government would not aid Captain Grosseliez in exploring so savage a region, but Prince Rupert sent Captain Zachariah Gillam with him to Hudson Bay and he explored Davis Straits to 75° N. He wintered comfortably at Rupert's River, where he founded Fort Charles. On his return the charter of the Hudsons Bay Company was conferred on Prince Rupert and his associates, and for over half a century the fur trade gave a quietus to Arctic exploration in that quarter.

In 1676 it was stated in London that a Dutch vessel had sailed several hundred leagues northeast from Nova Zembla between the parallels of 70° and 80° N., finding an open sea and a way to China so nearly certain, that an exclusive charter for its use had been solicited of the States General. Also that in 1655 a Dutch whaler had sailed within one degree of the North Pole, and that three separate journals kept in the same ship August 1, 1655, determined the latitude at 88° 56′ N., the ocean being absolutely clear of ice with a hollow rolling sea like the Bay of Biscay. In support of this claim one Joseph Moxon, F. R. S., told of overhearing a Dutch whaler detail to another how his ship had only gone out to bring home the lading of the others; but before returning had sailed to the North Pole and even beyond it, finding an open sea and no ice. As a result of the interest excited, Captain John Wood and William Flawes sailed in the ship *Speedwell* and pink *Prosperous* May 20, 1676, but on June 26 the *Speedwell* ran on the rocks and went to pieces, losing two of her crew. They saved plenty of provisions and built a hut, but after nine days were taken on board the *Prosperous*.

In 1722 the Hudsons Bay Company, despite their refusal, were actually compelled by Captain James Knight to fit out two vessels to discover a rich copper mine and incidentally to keep their charter agreement "to make discoveries." They placed under his command the ship *Albany* and sloop *Discovery*, Captains George Balow and David Vaughan; they sailed away and as neither was ever heard of again, the *Whalebone*, Captain John Scroggs, was sent on a relief expedition. Captain Scroggs sailed to latitude 64° 56′ N., but beyond naming Whalebone Point added nothing to former discoveries. In 1767 some boat crews of the company found in a harbor at the eastern end of Marble Island, guns, anchors, anvils, cables, etc., which had not been removed by the natives; the bottoms of two vessels lay under water, and the remains of a house stood near by. Some of the guns and the figurehead of one of the ships were sent to England. Later in 1769 an old Esquimau told that the largest vessel was badly damaged, and the English, about fifty in number, began to build their house. Many died during the winter and in 1770 the sur-

vivors seemed very feeble. At the beginning of the second winter only a score survived, and in the summer of 1721 only five remained alive, three of whom died of eating raw blubber and seal given them by the Esquimaux. Two were left who still looked seaward for help and would sit down and weep. At last one died, and the survivor expired while trying to bury his comrade. In 1741 Captain Christopher Middleton in the *Furnace*, bombketch, and William Moore in the *Discovery*, pink, passed the winter in Churchill River, but the summer went by uneventfully and Middleton was charged with having intentionally avoided any discoveries which might disturb the Hudsons Bay Company.

In the year 1742 the English government offered the large reward of twenty thousand pounds sterling "to the person or persons, subjects of his majesty, who should discover the Northwest Passage." In 1746, when Sir William Pepperell's Yankees were taking Louisburg, the *Dobbs Galley* and *California*, under Captains William Moor and Francis Smith, sailed for Hudson Bay and moored in a creek near Fort York, where they wintered comfortably; but their next year's explorations added little to geographical knowledge.

Samuel Hearne, sent overland by the Hudsons Bay Company to reach the Copper Mine River, made three attempts, first turning back at 64° N. latitude; in 1770 failed again; in 1771 he reached the Copper Mine River, July 13, and two days later commenced exploring it. His Indian escort massacred some twenty Esquimaux in one camp and destroyed the camp, food and supplies of another party. The latitude and longitude reached were not reported by Mr. Hearne, and his whole narrative is very unsatisfactory.

An attempt to reach the North Pole by Captains Constantine John Phipps of the *Racehorse* and Skiffington Lutwidge of the *Carcass*, both bomb ketches, R. N., was made in 1773. They visited Spitzbergen and skirted the ice up to 80° N., but after many futile attempts to pass the ice barrier, the ships were beset and escaped with difficulty.

Captains James Cook and Clerke in the *Resolution and Discovery*, sailed, in 1776, for Behring's Strait, which, after many discoveries in the South Pacific, they entered August 9, 1779, near Cape Prince of Wales. Certain other points and islets were viewed and named, but fearing the ice-stream and a winter in the polar regions, Cook sailed for the Sandwich Islands where he was killed by the natives. Captain Clerke, who suceeded him, in 1780, got as far north as 70° 33′ N., but after about three weeks cruising gave up the attempt and returned to England.

Captain Richard Pickersgill in the armed brig. *Lion*, in 1776, and Walter Young, who succeeded him in command in 1777, visited Hudson Bay but contributed nothing to the knowledge already acquired.

The Russian captains seem to have failed to pass from Archangel around Siberia to the Lena, but it is said that a Cossack named Deshneff succeeded in 1648. One, Shabanrof, a Yakutsk merchant, persistently attempted it in 1761, 1762 and 1764, but neither he nor his crew were ever heard from after sailing on the last voyage.

In 1820-24 Baron Ferdinand von Wrangel, made sledge journeys along the Siberian coast and sought as far north as 72° 2′ N. latitude for land reported to exist. This known as Wrangell Land was sighted by De Long in 1867; and Captain Hopper, who visited it in 1881, and named it New Columbia.

Sir John Ross and Captain Parry with the *Isabella* and *Alexandria* attempted the Northwest passage in 1818, skirted West Greenland to latitude 76°54′ and met the Cape York Esquimaux, calling them the "Arctic Highlanders." Going south he explored Lancaster Sound for fifty miles, but turned back. In 1829, he returned in the paddle-wheel steamer, *Victory*, the first used in Arctic navigation but it proved useless. His nephew, Sir James Clark Ross, made brilliant sledge journeys, discovering King William Land, and locating the northern magnetic pole west of Boothia Felix in 1831.

Sir John Ross spent three winters in the ice and at last abandoned his ship, and marched to Fury Beach, where supplies were cached; spent a fourth winter and was rescued by a whaler in 1837, having lost only three men.

Captain David Buchan in 1818, in the *Dorathea*, and Lieutenant John Franklin in the *Trent*, sailed to reach the North Pole by way of Spitzbergen, reaching latitude 81° 34′ N. During a second attempt Buchan's ship was lost at sea. Buchan died in 1837.

Captain William E. Parry, in 1819, set out

for the Northwest Passage with the ships *Griper* and *Hecla*. He ascended Baffin's Bay, explored and named Barren Strait, Prince Regent's Inlet, Wellington Channel, and Melville Island, winning a prize of £5,000, sterling ($25,000) offered by the English government by crossing longitude 110° W. returning to England in 1820.

In 1821, with the *Fury* and *Hecla*, he reached Repulse Bay, wintered on Melville Peninsula, and in 1821 discovered Hecla and Fury Straits. In 1824 he returned, but, after a winter on the ice and losing the *Fury*, returned home. In 1827 he tried to reach the Pole from Spitzbergen with two boats on runners, twenty-eight men and supplies for seventy-one days, but the southward drift defeated him, although he reached 82° 25′ N., the highest latitude for forty-eight years.

(Sir) John Franklin (1819) was detailed to cross overland from Hudson Bay to Rupert Land and eastward from the Coppermine River. He spent three winters (1819–21) in the wilderness, traveling 5,500 miles. In 1825, he descended the Mackenzie River, wintered near its mouth and explored the Northwest Alaskan Coast to Point Beechey where he was met by Captain Frederick Beechey in H. M. S. *Blossom*, in longitude 149° 37′ W. In 1845 he sailed in command of the *Erebus* and *Terror*; one hundred and thirty-eight officers and men, intending to make Cape Walker and thence sail southwesterly toward Behring Strait. The ships were last seen by a Scotch whaler in Baffin's Bay, but were never again sighted.

After Franklin's disappearance in 1848, no less than thirty-nine relief and search expeditions were fitted out, up to 1857, involving an expenditure of over one million pounds sterling. In 1854, Dr. Rae with a Hudson Bay party came across some traces of the lost expedition, but in 1857, Lady Franklin's expedition, under Captain McClintock, found remains and records that had escaped destruction. Franklin had gone up Wellington Channel, returning west of Cornwallis Island, and wintered (1845–46) at Beechey Island, latitude 73° 43′ N., then sailed between Prince of Wales and North Somerset Islands to within twelve miles of King William's Land, where they wintered, and Sir John Franklin died on board his ship, June 11, 1847. In 1847 Captain Crozier abandoned the ships and with one hundred and five survivors started for the Great Fish River, but all perished.

In this search for Sir John Franklin the veteran Sir John Ross, then seventy-three years old, sailed in 1850 in the *Felix*, but failed. Sir James C. Ross had been no more successful in the *Enterprise* and *Investigator* in 1848–49, and Captain Collins succeeded him in 1850 with Sir Robert McClure in the *Investigator*, to prosecute the search by way of Behring Straits. McClure became fixed in the ice in Prince William Strait near the northern shore of Bank's Land, where four winters, 1851, 1852, 1853 and 1854 were passed. In 1854 McClure was relieved by McClintock, who under Sir Edward Belcher had penetrated from the Greenland side, and, although not in his ship, was first to make the Northwest Passage.

Dr. Elisha Kent Kane in 1850 sailed under Lieutenant E. J. De Haven, commanding the *Advance* and *Rescue*, sent by Mr. Henry Grinnell, a wealthy merchant of New York, to find Sir John Franklin. They became fast in the ice and returned in 1851. In 1853 he returned in the *Advance* and penetrated Smith's Sound to Van Renselaer Harbor, where they spent two winters, latitude 78° 43′ N.

In June, 1854, a sledge party reached Cape Constitution, latitude 80° 35′ N., from whence open water reaching far to the north was visible. In May, 1855, the *Advance* was abandoned and the crew having lost in all three men by death, reached Upernavik where Captain Hartstene, sent to relieve him, took the party on board.

Captain Isaac Israel Hayes, surgeon of the *Advance*, under Kane, sailed from Boston, Mass., in search of the open Polar Sea (1860) in the schooner *United States*. He spent the winter of 1860–61 at Littleton Island, latitude 78° 18′ N. but in 1861 reached latitude 81° 35′ N., at that time the highest point reached via Baffin Bay. He held that the North Pole could be reached by a powerful steamship from Cape Frazer.

Capt. Charles Francis Hall in 1860 sailed from New London in the whaler *George Henry* to find the Franklin survivors. The ship was beset and he landed and lived among the Esquimaux near Frobisher Bay until his return in 1862. In 1864 he returned with a whaleboat and some provisions, and

in 1866 secured from the Esquimaux some silver bearing the Franklin crest and other mementoes. By 1869, he had penetrated to the South shore of King William Land and learned of the death there of seventy-nine men by starvation. In 1871, he was sent out in the little propellor *Polaris* and penetrated by Smith's Sound to latitude 82° 16′ N., the highest then reached by a vessel. Returning from a sledge journey to Cape Brevoort, he became suddenly ill and died November 8, 1871. The *Polaris* while on her return south was crushed by the ice and nineteen of the crew drifted south on the icefloes for five months, thirteen hundred miles, to Smith Sound, where April 30, 1872, they were rescued by a Scotch whaler. The remainder took to the boats after having wintered near the lost *Polaris*, and finally reached a vessel, June 3, 1873.

In 1872-74 Captain Weyprecht and Julius von Payer led the Austrian expedition which resulted in the discovery and exploration of Franz Josef Land.

In 1875-76 Sir George Strong Nares, R. N., with the *Alert* and *Discovery* ascended Smith Sound, to latitude 82° 27′ N., the best ship record then made. Lieutenant Markham with sledge parties increased this northing in 1876 to latitude 83° 20′ also the best record for ice travel.

Nils Adolf Eric Nordenskiold in 1878, after numerous minor expeditions to Spitzbergen, Greenland and the Arctic waters of the Kara Sea and Yenesei, sailed from Tromsoe in the *Vega*, July 21, 1878, and after being fast in the ice some months reached Behring Straits and Japan, having made the long sought Northeast Passage around Asia.

George Washington DeLong of the American Navy commanded, in 1879-81, the steam yacht *Jeannette*, sent out by James Gordon Bennett of the New York *Herald*, to reach the North Pole via Behring Strait, but the vessel was heavily freighted and unfit for ice navigation; was with difficulty kept afloat through the winter and finally was crushed by the ice June 13, 1881, in latitude 77° 15′ N. The crew manned three boats. Lieutenant Chipp's was lost with all on board. Engineer Melville's reached the Delta of the Lena, but De Long perished of cold and starvation, October 30, 1881, as did eleven of the fourteen men who landed with him.

Lieutenant Adolphus Washington Greely, of the Signal Corps of the American Army, was detailed in 1879 to establish one or more of thirteen circum-polar stations proposed by the Hamburg Internaional Geographical Congress. With twenty-four officers and men, he wintered (1881-83) at Discovery Bay, Grinnell Land, sending out sledge and boat parties, Lieutenant Lockwood and Sergeant Brainard attaining latitude 83° 24′ N., the then farthest north. Reaching Cape Sabine in October, 1883, with great difficulty, they found that the supply ship *Proteus* had been lost in July, and all perished of starvation but Lieutenant Greely and six men, who were rescued by Commander W. S. Schley in June, 1884.

Robert Edwin Peary in 1891-92 crossed the great Greenland ice cap in latitude 81° 97′ and reached the northeastern coast of Greenland, proving its insularity, traversing some thirteen hundred miles, besides making most interesting researches in every branch of explorations. In 1893-95 he made a second expedition, again traversing Greenland, and discovered the huge meteorite at Melville Bay, one weighing ninety tons, which he finally removed to the United States.

After summer voyages in 1896 and 1897, he sailed in 1898, spent four years in sledge journeys and general explorations, and traversed the islets north of Greenland to latitude 83° 39′ N. In 1902 he set out from Grant Land on a dash for the North Pole, but was turned back by the rough ice after attaining latitude 84° 17′ N.

Fridjof Nansen, of Norway, in 1888, crossed the ice cap in southern Greenland from the west to the east coast. Having noticed that a pair of trousers left near Siberia by one of the Jeannette's crew as well as Siberian woods were picked up in Greenland, he started in the *Fram* from Norway in 1893, heading to the northeast, put into the ice pack off the Siberia Islands, and drifted northwest until March 14, 1895. With Lieutenant Johansen and dog sledges, he headed for the Pole reaching latitude 86° 25′ N., two hundred and seventy-two miles from the Pole, and one hundred and eighty-four miles nearer than any one had hitherto gone. Making for Franz Josef Land they spent the winter in a snow hut living on game. Reaching Spitzbergen he found the Harmsworth expedition with which

he returned to Europe. The *Fram* released from the icepack, latitude 85° 57′, reached Norway in safety.

Louis, Duke of Abruzzi, in 1899-1900, penetrated north of Franz Josef Land to 86° 33′.

Captain Amundsen sailed in 1904 in a small vessel successfully passing through the Northwest Passage, without loss or damage.

In July, 1907, Dr. Frederick A. Cook, who had accompanied Peary as surgeon in 1891-92, and was a member of the Belgian Antarctic Expedition in 1897, sailed from Gloucester, Mass., with Mr. John R. Bradley in his schooner of the same name, to the East Greenland coast. Mr. Bradley's object was to enjoy the sport and adventure of a summer's cruise in those high latitudes. Dr. Cook's purpose of Polar exploration was a profound secret until its successful issue was announced to the world. It appears briefly that the schooner reached Etah, the favorite winter residence and hunting place of the Esquimaux, but found that the most of the natives were at Annootok, the "Annoatok" of Kane and Hayes, and called by Kane "the wind-loved spot," on account of its bleak and tempest-swept exposure in the winter months. Here there is no harbor, and former records depict it as deserted by the natives in the long Arctic night. About a day's drive northwest Kane's brig, the *Advance*, lay imbedded in the ice for two winters; and when seeking food of the Esquimaux, Annoatok's ruined igloo was a kind of half-way house for his sledge journeys. The distance from Annoatok to the North Pole is somewhere about six hundred and ninety miles in a direct line up Smith Sound, but the John R. Bradley was not fitted to pursue the ice leads through which Kane, Hayes, Greely and Peary had pressed seeking a base of operations nearer the Pole.

Here then at Annoatok, from the several statements made, it was decided about September 1, 1907, to commence a dash for the North Pole, and here the supplies and outfit of Dr. Cook were landed. From this point, leaving one man, Rudolph Francke, a cook, who assisted him in caring for his stores to await news at Annoatok, in December Dr. Cook set out on his long journey by way of Ellesmere Land to the Pole. His course was nearly west across the sound to Ellesmere Land and thence by land and sea ice to a point on the northern coast of Grant Land, some fifty or sixty miles west of Cape Columbia, afterwards the basic starting point for Peary's last attempt. He dates his arrival at the North Pole, April 21, 1908.

Dr. Cook's attempt covered besides the final dash to the Pole, the crossing of Smith Sound with his supplies and their conveyance over Ellesmere Land, increasing the distance to be traversed to about one thousand miles. With the aid of the Esquimaux, this was accomplished between December and March in the moonlit nights of the Arctic winter. That this was successfully done with the aid of the Esquimaux alone beggars all previous records of Polar discovery. The final dash across the Arctic Sea was quite within the limits of possibility, given smooth ice and fine weather. Dr. Cook's westing would to some extent lessen the loss by the eastward drift of the ice pack, and his speed, endurance and daring, will long stand alone in the annals of human achievement.

Lieutenant Peary in 1908 sailed in the steamer *Roosevelt* and pushed through Smith Sound to Cape Sheridan in Grant Land, latitude 82° 30′ N., September 1; prepared for the winter and sent supplies ahead all winter to Cape Columbia about 83° N. latitude—whence starting March 1, 1909, he finished the trip of seven degrees (four hundred and ninety miles in a direct line) on April 6, 1909. His success up to a certain point was due to superior resources and assistants, which enabled him to concentrate at Cape Columbia all that was necessary in the matters of shelter, food, fuel, transportation and assistance to penetrate that broken and often almost impassable barrier of jagged ice and open leads which almost always bar the way from the solid "icefoot" to the floating "pack." These almost inevitable difficulties appear to have lost Peary eight or nine days out of the first eleven of his final dash for the pole, and, undoubtedly, a good deal of work with shovel and axe. Starting with many sledges, dogs and men, sending back as he progressed injured sledges, failing dogs and men whom he could not afford to feed, and thus eliminating the chances of failure, and selecting the surest factors of success, Lieutenant Peary displayed in his last great journey qualities of which his countrymen may well be proud.

A RAILROAD for RUBYVILLE

By HARRY LEE SNYDER

RIPLEY CONVERS' physical attractions were inconsiderable, but he had kissed the Blarney stone. His mother had once said—strange as it may seem, his mother called him "Johnny"—that he could wheedle the harp out of the hands of a man-grown saint. But Ripley Convers had never been put to that test, and it may be that the maternal estimate of him was based upon prejudice.

He had met nearly every other test, however, and his success had been so pronounced that there must have been some uneasiness in the place where the saints dwell lest he should be unexpectedly projected among them. At the age of eighteen he had wheedled his father out of one hundred dollars which he had saved by the practice of strenuous self-denial. Thereupon he had put behind him the paternal domicile, cast aside the ties of family and the bonds of friendship, sloughed off the name he had theretofore borne, annexed a new one more in consonance with the part he had planned to play, and gone joyously forth to wrest—no, wheedle—a riotous living from a reluctant world.

And so, some ten years later, Ripley Convers drifted into Rubyville. He had gathered unto himself considerable money during those ten years, but he had parted with precisely the same sum, for when he scrawled his name upon the soiled register in the Eagle House he had exactly one hundred dollars secreted about his person. It was a point of honor with him never to permit the amount of his exchequer to fall below one hundred dollars, and it had never done so since Johnny Brown left home. If necessary to preserve that sum inviolate, he would work—though only as a last resort—and once or twice he had been driven to that dire extremity. At the time of his appearance in the village, he was just upon the verge of another crisis in his affairs and was seriously considering the possibility that he might be driven to the point of accepting a more or less lucrative position. With the utmost composure, however, he handed Jim Bellows, the clerk, his roll of bills.

"You just lock that in your safe," he suggested. "I never carry money with me if I can avoid it."

Having thus established his credit and having made sure that his sojourn at the Eagle House would not be disturbed for some time, he ate his supper and strolled out upon the street. Rubyville looked good to him; it looked easy. And there were reasons which went far to justify his opinion. Many years before, Rubyville had just missed a railroad—or the railroad had just missed Rubyville, suit yourself about that—and ever since that time it had been patiently waiting for something to happen. As Ripley Convers smoked his cigar and strolled about the village, he concluded that it was about time something happened. Ripley Convers slept peacefully that night. So did Rubyville. It had no premonition of the explosion that was to arouse it the next day.

Early in the morning he was busy. Until noon he was seen here and there about the village, but it was observed that he was exceedingly cautious and that he conferred with comparatively few men, and only with those, too, who were owners of village property. At noon he handed Jim Bellows a bulky package of papers tied with impressive red tape.

"Put these in your safe, Jim," he said. "They are very valuable."

Jim Bellows pulled down his vest impor-

tantly. It was not often that he was intrusted with the safe keeping of valuable papers, and it was not often that a mellow-voiced stranger addressed him by his Christian name.

Immediately after dinner, Convers called upon the president of Rubyville's one bank. Johnson Price was an important man himself and he habitually greeted strangers with reserved frigidity, but he melted under his caller's ingratiating smile like an ice-cream cone in the hands of a red-headed boy.

"Of course," said Ripley, "since my business is exceedingly weighty, I have felt that I must first see the leading citizen and only banker of your charming little town."

Price beamed genially. Even to an important man flattery is an unctuous balm.

"The question is," Convers' tone conveyed just the correct degree of hesitation, "can Rubyville absorb an allotment of bonds —say fifty thousand dollars worth?"

Absorb! Price repeated the word slowly, rolling it under his tongue like a sweet morsel. The flavor of Wall Street and the aroma of the marts of trade clung to it. Nevertheless, he replied with that cautious conservation which he felt was becoming to one occupying his position in the business world.

"That would depend, my dear sir, upon the character of the bonds."

"Oh, the bonds are all right," responded Convers carelessly. "I was concerned as to whether or not Rubyville could command so much available cash."

Price rose majestically, and theatrically threw open the steel doors of the bank's vaults.

"You see before you," he boasted, "nearly half a million in cold cash and the individual deposits of the bank run well over a million. Rubyville is located in a remarkably rich community, sir."

"Ah," responded Convers. "Then I may safely disclose to you my business. I am the confidential man of a group of financiers who are projecting a new railroad. The line as surveyed passes near your charming town and it is my business to ascertain whether or not your citizens would likely be willing to subscribe for first mortgage gold bonds in the sum of fifty thousand dollars, upon the condition, of course, that the road passes through here."

Price threw up his head with a question on his lips.

"Don't ask me, I implore you," begged Convers. "As a confidential man I cannot say who my superiors are or what the terminals of this road are to be."

"Of course," conceded Price, "as a banker, I realize that. All transactions of such magnitude must be handled with extreme care in the beginning."

"Exactly," agreed Convers. "Your observation offers eloquent testimony of your experience and business acumen. As an influential banker, one acquainted with the ways of men who handle great business projects, you fully appreciate the situation. And when the project involves millions—"

"Surely," interrupted Price, "surely. I realize that. But as for the bonds, Mr.—"

"Convers."

"As for the bonds, Mr. Convers, there will be no difficulty in subscribing that amount. I will gladly undertake to handle them for your people."

"In that case," responded Convers, "I can assure you that trains will run through Rubyville in less than a year. My superiors will be guided wholly by my judgment and I can readily see that it will be a grave error to pass by so thriving a little city as this is."

Thereupon Ripley Convers, having lighted the fuse, returned to the hotel to await the explosion.

It followed speedily, and, though he did not hear the detonation, he did observe the effect. He saw the banker pass hurriedly down the street, and men were soon rushing here and there, bustling with nervous energy, the eager, excited expression upon their faces proclaiming the possession of news that must be told. In less than half an hour the village shoemaker, pale, anaemic and emaciated, entered the hotel unobtrusively and sought the unprepossessing stranger who was able to work such uncanny magic.

"Mr.—ah—Convers," he hesitated, "you know I signed a contract a while ago to—to sell you my shop."

"Why, yes," said Convers, "so you did, Mr. Armstrong, so you did. I believe I have a bargain in that, too," he concluded with a pleasant laugh.

"But—but, Mr. Convers, a railroad is coming through Rubyville."

"Yes," admitted Convers, "it probably will."

"But you know it will," burst out Arm-

strong, "and you know that my property will double in value just as soon as it does."

"Of course, Mr. Armstrong, I presume that is true, if the road goes through," admitted Convers. "I hope to make some money on that little property."

Armstrong pushed his thin gray hair back from his forehead. Here was an authentic confirmation of the rumor, and here was a dead loss to himself because he had been in such a hurry to sell. He was an old man and a poor man. A little money meant much to him.

"Come, Mr. Convers," he pleaded, "tear up that there contract, and let me have my place back. Me and the old woman need all the money we can get, sir."

Convers appeared to consider the matter. "I wish to do what is right," he suggested, "but, as a just man yourself, you can hardly expect me to forego all my profit."

Armstrong grasped frantically at the straw. "I'll give you fifty dollars for your bargain," he declared eagerly.

"Make it one hundred and I'll take it," asserted the other.

And so it was done. And Ripley Convers smiled softly as he folded the crisp bills which Armstrong obtained from the bank. Ripley Convers did not know—it would likely have made no difference if he had—that those bills represented all of the old man's savings.

"'Mr. Convers, tear up that contract.'"

During the next two days he held a score of similar interviews, and at the end of them five thousand dollars had been intrusted to the custody of Jim Bellows. Ripley Convers had little use for banks as depositories—and he intended to leave town the next day, anyway.

* * * * * * *

As Ripley Convers sat in front of the hotel that evening, he was entirely at peace

with himself and had no quarrel with the world. He had no uneasiness in regard to the five thousand dollars. Jim Bellows' innocence was the insurance of his honesty, and, besides, he was to depart the next morning to have a fanciful interview with his unknown and mysterious sponsors. While in that contented frame of mind, a swirling gust of wind lodged a girl's dainty hat at his feet. As he glanced up, he found himself looking into a pair of deep blue eyes which caught and held his wavering glance for just the fraction of a second.

Now Jennie Price had not walked by the hotel that evening for the purpose of meeting the mysterious Ripley Convers. Not by any means. It is true that she had heard much about the unattractive stranger whose manner was so persuasive and whose influence with men of wealth was so limitless. It is also true that her hat was very insecurely fastened and that she had held it with one hand until just as she reached the corner by the hotel—but those are merely incidental items, and cannot be seriously considered in the determination of a young girl's purposes and methods.

Convers returned her hat with a respectful bow. "I am most fortunate," he smiled, "to be of even small service to you. I could not have hoped for a greater pleasure."

But now that Jennie Price was face to face with the celebrity, she was greatly annoyed to find herself blushing. She had not anticipated so courtly a manner, and she had not expected to look into hazel eyes that were so luminous and expressive. She had not supposed, either, that Ripley Convers would walk home with her, or that he would meet with such a hearty welcome from her father.

"I'm glad you have met my daughter," said Mr. Price genially. "I was thinking only today that I had been very thoughtless in not inviting you to our home."

Mrs. Price, placid and fat, gave her husband's words the approval of a perfunctory smile. She was not any too well satisfied that Ripley Convers was as guileless as he seemed, but she had not acquired the habit of contradicting either her husband or her daughter.

When Ripley Convers rose to go, the whole family went to the door with him, and, as it was a moonlight evening, Jennie, after the fashion of Rubyville, strolled with him down the walk to the street. Leaning over the little picket gate, he asked:

"And when shall I see you again?"

"Oh," she responded lightly, "when you come to build your railroad, perhaps—if you care to."

"No," he looked straight into her eyes, "I shall see you tomorrow afternoon—and then again tomorrow evening."

Jennie again blushed in the moonlight, but she did not contradict him. Who could contradict so masterful a man?

For Ripley Convers had suddenly decided to stay in Rubyville for a few days. It would be embarrassing, he thought, to go away and leave any part of his anatomy behind, and he knew that Jennie Price had his heart in her keeping. He slept dreamlessly in his bed in the Eagle House, but he would not have done so had he known that a letter had fallen from his pocket at the little picket gate, and that Jennie had picked it up and read it.

He entered the office of the hotel the next morning to find everything in a turmoil and Jim Bellows rushing here and there in a frenzy of excitement.

"What's the matter?" he asked.

"Matter!" roared Jim. "Haven't you heard?"

"Never heard a sound," he declared. "I slept like an infant."

"Burglars got in here last night," explained Jim, "and busted open the safe."

Convers looked at the clerk with a question in his eyes.

"Darn it. Yes!" declared Jim. "They got every cent of your money."

Ripley Convers sat down tranquilly. He drew a pencil from his pocket and sharpened it abstractedly with a pearl-handled pocketknife. "I suppose the proprietor is responsible to me," he suggested at length.

"Won't do you much good if he is," grumbled Jim. "He ain't got a cent, and the blamed hotel has got mortgages sticking all over it like porous plasters."

Convers sighed. It wasn't the first time he had seen money slip noiselessly away from him, but it was the first time that his initial capital of one hundred dollars had taken wings unto itself. Then he ate his breakfast and went to see Jennie. Afternoon seemed too far away.

Three days later two things happened. The first one was perhaps the more important of the two, though it made no impression upon the public, presumably because the public knew nothing about it—Jennie Price promised to marry Convers. The second one was another explosion—and it rocked Rubyville to its foundations. Convers first heard of it as he met Johnson Price upon the street.

"Your work has borne fruit, Mr. Convers," said the banker cordially. "Rubyville is to have a railroad."

"You don't tell me!" he exclaimed, startled out of his usual self-control.

"Exactly," replied Price. "The S. T. & V. has been flirting with Rubyville for a long time, and the news that another road will probably pass through here has brought affairs to a crisis. The directors yesterday passed a resolution to build a branch to the village at once. It will be the making of this town, for already several manufacturing plants are projected. Real estate will more than double in value."

"It's a fortunate circumstance for Rubyville," declared Convers.

"Yes," said Price, "a very fortunate one. I presume this will make no difference with the plans of the people you represent."

"No," said the other slowly. "I am sure it will make no difference at all."

As Ripley Convers walked up the street, he could clearly discern the beginning of the end. There was no hope of his recovering the money which had been stolen from the hotel, and even had there been, its possession would have been embarrassing, for he had discovered that it was difficult to look into the honest blue eyes of Jennie Price while that money was in his possession. His conscience was fairly untroubled, however, for he knew that the accession of a railroad to Rubyville was entirely due to his own efforts, however misdirected those efforts had been. Ripley Convers was not at heart a bad man, and the advent of Jennie Price into his life had made him a better one.

"I am going away tomorrow," he said to her that evening. "I must see the financial men whom I represent, and—er—there is some business which demands my attention."

They were sitting in a hammock swung in her father's vine-covered porch, and at his words, she drew slightly away from him,

"'Ripley Cowers, you are a fraud,' she said."

though he would have seen a smile upon her lips had she not been in the shadow.

"I should think you would stay," she suggested, "and try to recover the stolen money."

"It's no use, I'm afraid," he replied ruefully. "The money belonged to my employers, but perhaps they will not make me lose it."

Jennie Price laughed. "Ripley Convers, you are a fraud," she said.

Convers looked at the girl uncertainly. He did not know whether the charge was o

girlish pleasantry or the well-considered opinion of a woman. Whichever might be the case, however, he armed himself with man's best weapon of defense.

"Maybe," he conceded, "but I love you."

"Your millionaires are purely the creatures of your imagination," she continued, ignoring his words, "and a railroad to the moon is about as likely to be built as is yours."

He stood up at her side, thrusting his hands into his pockets and looking down at her with a puzzled frown upon his forehead. He glanced at his well-shod feet, half expecting to see them entangled in a web of complications.

"Jennie," he said, "what are you talking about?"

From the bosom of her dress the girl took a letter and handed it to him.

"You boasted too freely when you wrote to your friend in New York," she said.

Ripley Convers sat down upon the steps and again began to sharpen his pencil with his pearl-handled pocket-knife. His coolness in an emergency had carried him safely through many a delicate situation, but he was obliged to confess to himself that he had never encountered a more delicate one, and that he had never had so much at stake. It would have comforted him, though, could he have seen the tender lovelight quivering in the eyes of Jennie Price. He had been a fool, he reflected, for writing that letter. He did not usually boast, but—

"You will have to advise me, Jennie," he said suddenly. "You know the whole story, and I will be guided by you. What am I to do now?"

During all of his curious career Ripley Convers had never framed more effective sentences, for by them he made Jennie Price his ally. It is, perhaps, fortunate that men do not know their power, but they can bind women to them absolutely by the simple device of investing them with all responsibility for conduct which may affect them both.

"You are going to my father," she said promptly, "and tell him all about it. He will offer you a position in his bank, and—"

"He never will," he interrupted.

"He will," she said. "Leave that to me. Then you are going to pay Mr. Armstrong and all the other men this money."

"I haven't a cent, Jennie," he gasped. "It will take me years to save so much from a salary."

"No matter—"

"Hello!" called Johnson Price as he came up the walk. "Good news for you, Convers. They've caught the thieves and the village marshal has your money."

After a few words of explanation, Mr. Price passed into the house. Ripley drew a long breath and again stood before the girl, vainly endeavoring to look into the blue eyes.

"And after I have returned the money, Jennie, and obtained a place in your father's bank, what am I to do then?" he asked.

"Then," she said softly, "I think you are going to marry me."

And that is exactly what Ripley Convers did.

A REVELATION of HEARTS

BY SUSAN HUBBARD MARTIN

THEIR estrangement seemed complete. For many days Winifred had seen him but rarely, and then never alone except in the carriage going to and from some function. Herndon spent a good deal of his time at the club, having renewed the ties with his former bachelor friends that his marriage had interrupted. His wife knew that he was not well. She had overheard him tell Sanford so a day or two before, and at the time it had occurred to her bitterly that she was the last person to whom he would think of mentioning it.

She had always made rather a point of being down to breakfast in time to serve his coffee, but of late she had yielded to self-indulgence enough not to rise until after he had gone to the city to his business. But this morning as she came languidly down in her dainty morning gown, she came face to face with him at the foot of the stairs.

Her "good-morning" was quite courteous, but studiedly indifferent. To her surprise he lingered in the hall, apparently with some thought of speaking to her.

"If you are not busy, I should like to talk with you a minute, Winifred," he finally said in a hurried, hesitant fashion.

There was a gleam of quiet sarcasm in her eyes that suggested he had not troubled her much that way of late, but she only said "Certainly!" and led the way to her sunny den.

She nodded casually at a chair and said: "Won't you sit down?"

But he had already walked to a window, his heart full of bitterness at her manner of airy indifference. His troubles were nothing to her. He was merely that part of her scheme of life that was necessary to supply the means to satisfy her needs, otherwise of no more importance than the butler or the cook. He hardened his heart to demand no sympathy from her.

She waited for him to begin, a slender, graceful figure of perfect poise with a reserved face of similar charm that expressed a self-containment which excluded him.

He turned from the window. "A beautiful morning. New York is at her best just now."

"Did you bring me here to tell me that?"

But something in his haggard eyes and worn face reproached her. "Is anything wrong? Are you having business troubles?" she asked, less impersonally.

A sardonic smile touched his lips. "Nothing so serious. It's merely my health. It's not quite up to par."

"Your health?" She watched him steadily, without moving, a film of anxiety in her eyes.

"The doctors think I had better go out West for a year or two and live outdoors."

"Why?"

"I have had one or two light hemorrhages lately, and yesterday I dropped in on old Morris to get a tonic. He insisted on an examination and decided that there was some incipient trouble in my right lung. I went to Parks, the specialist, and he confirmed what Morris had said."

"Did they think it—serious?"

He answered in a dry matter-of-fact voice. "If it is arrested at once it may prove of small moment, but if I stay here it will ultimately get the better of me."

She knew he was making light of it, and the undertug of pain at her heart belied her quiet manner and emotionless face.

"You must go at once."

"I suppose one had better," he answered listlessly. "One can't quit in the middle of the game."

Her eyes flashed a sharp, stealthy question toward him. Was it so bad as that? Was he so tired of their unhappy marriage that any escape, even death, was hardly to be avoided?

"It's going to be a bit of a nuisance for you, my going away. I would suggest you keep the house. I think your sister and Bob could be persuaded to live with you. That would help solve things and make an ideal arrangement."

"Quite ideal," she agreed, looking at him with a touch of scorn out of ironic eyes. "And where are you going? Did they indicate a place?"

"Parks seemed to think Colorado. He advised a ranch. I may as well follow his advice and do the thing thoroughly."

"Better," agreed Winifred. "When can you get off?"

"Next week, I think. It will take me a few days to arrange things."

"I shouldn't lose any time. They say the main thing is to arrest trouble of this kind before it has gone far."

He hurried to catch his train in a swelling tide of bitterness. She was so far from him in feeling that she had not given him one word of sympathy. Her whole concern had been to hurry him away as fast as she could.

He might have changed his mind if he had seen her, breakfast forgotten, stretched on a lounge in a stress of silent, tearless emotion. She was fighting both her terror of this dread disease that was stealing over him, and her poignant grief at her exclusion from his inner life.

"How can I help him when he doesn't want me to; when he deliberately shows me that he considers I have no interest in what he does? He treats me as if I were a piece of the house furniture. What a farce our marriage has become! And now it is to be a tragedy?"

It was three days later that she made an announcement at breakfast.

"The Temples will take the house off our hands for a year. They are very glad to get it."

He looked up quickly. "So you have decided not to keep the house."

"I am going to Colorado."

His heart leaped, but he answered with an even voice:

"Have you considered the matter very carefully? I am afraid you would find a ranch in Colorado very different from what you have been used to. It offers bare existence and not much more, I take it."

"I have quite made up my mind," she replied.

"I suppose you are going from a sense of duty. It really isn't necessary, Winifred."

"Still, I shall go," she answered coldly.

* * * * * * *

Life on a mountain ranch in Colorado! Who that has not tried it can imagine the reality? The rare untempered air with its stinging call to deep, clean breaths; the wonderful sunsets; the changing color of the circling mountain line, now blue, now violet, now purple; the large silences broken by the piping call of birds; the lambent sunshine on the brown hillside—all go to the making of an autumn day in the Rockies. Almost before she descended to the wooden platform at Sunset, Winifred knew they were going to be brought face to face with the simple verities of life for the first time since their marriage. The social conventions, the barriers built by the artificial life of a great city, had been taken down. There would be no resources of clubs and receptions to bridge their estrangement. They must come together as man and woman, one to one, just as in the primeval days of Eden, or they must drift further apart because they had not that in common which must make them as one.

A grizzled and unshaven pioneer who answered to the name of Wiggins met them at the depot with a dilapidated surrey. He glanced at Winifred dubiously, taking in her rich furs, the simple elegance of her slim lithe figure, with eyes which questioned the fitness of this hothouse exotic from New York to survive in the cold winds of the Rockies.

"There ain't but four rooms at the Baker place. I don't know as you can make out there," he said, surveying with wonder the trunks that were descending from the baggage car.

"We understood there were only four," she smiled.

"I've had the place cleaned up for you, but you'll have to do your own work, I reckon. Can't hire nobody round here for love or money."

Herndon looked at his wife. "That's a nuisance. I don't know what we'll do," he said in perplexity.

"I intend to do the cooking and the work myself," she told him promptly. "I'm going to have a chance to use that course of cooking lessons I took last winter. I shouldn't be surprised if I blossomed into a first-class cook."

"Nor I," he answered with a smile, for the three days on the train had brought them already to a more friendly working basis, without having broken the ice of their reserve that had been slowly gathering for years.

They had brought with them a few of their favorite pictures, two or three good rugs, some silver, linen and curtains. For the rest they depended on the ranch and Winifred's knack of homemaking. A good-hearted neighbor helped her at first to put things in order, but presently her husband's interest became aroused and he soon found himself busy hanging pictures and draping curtains.

That evening was the first of many they spent in the comfortable living room of the ranchhouse. He had no club to which he could go, nor had she any theatre or social function. Perforce they must be together and alone. Each of them rose to the situation and made the best of it. Not since the early days of their marriage had she been so bright and witty for his sole benefit. Indeed he could hardly remember when they had had an evening together free from the presence of outsiders, not at least since his fortunes had taken a turn that put the material world at his feet. He had to go back to the early days of their married life, when they were poor and frankly in love with each other, to find a duplicate for this occasion.

He read to her while she did some embroidery, and after he had finished the magazine article sat looking into the glowing fire of pinon knots and speculated on what joy might have been theirs if the big callous world had not thrust itself between them. For her part, she almost dared to let herself bask in a soft glow of happiness. Here in the primeval world of the empty mountains all things seemed possible, even that she might win back the love she had lost. Perhaps this was the chance God had given her. Herndon was already more companionable, the light in his eyes not so studiously courteous and wary.

It was impossible to resist wholly the sweet intimate familiarity of their lives, though each of them kept locked the inner citadel of their hearts lest the door should be open in an invitation not desired. They laughed over the failures of her cooking and applauded its successes. He helped her wipe the dishes after dining, that the long evening might by so many minutes be longer. For he had come to prize the least of them and to regret the hour when the clock indicated that they must say "good-night." He was in truth a lover again, but without the ardor and the confidence of the untried lover. He had had his chance and failed. That was the bitter rub, and now that it was gone he had awakened to discover himself more hopelessly enamored of her than ever. She was somehow recovering the light-hearted girlishness that the city had stolen from her. There was a new spring to her elastic step, a fresher color in her cheek. Her beauty lost its sharpness and glowed more warmly in this lissom mountain nymph than in the metropolitan dame he had known, or rather not known, a few months before. The change that informed her he knew to be of the spirit. She was like the princess who had been roused from sleep by the kiss of the fairy prince. She walked on the hilltops both literally and spiritually, and the new birth of her soul found its reflection in a body grown subtly more expressive of the graces within.

Daily Herndon improved. The simpler food, the purer air, a mind at ease and a body at rest—these all counted. He slept out of doors, with the blue sky for a roof and the stars for lamps. The sap of life flowed slowly back into his wornout body.

It fell on a day that news came to Herndon of the death of his only sister. They had been very close to each other, and as Winifred read the letter her husband had handed her without a word, there swept over her a wave of tenderness and compassion for him. Her heart went out with a rush but

"He dropped his gun . . . and came hurrying across the rockslide."

she was not a creature of impulse, and the habit of years is not easily broken.

"O Robert!" was all she said, but sympathy was softly vibrant in her voice.

He nodded his thanks, his jaw tightly clamped in the fashion of a man deeply moved.

"Think I'll take a walk up the canyon, if you'll excuse me," he said gently.

She respected his desire to be alone, but as she went about her household duties she tramped with him in spirit. It was baking day, but as soon as her bread was out of the oven she flew to her room and put on her walking skirts and boots.

The afternoon was well along and she followed the sun into the canyon cleft that pierced the mountain range. No lovelier pass could have been imagined. In season rich with blossoming anemone and columbine, it gave to the eye now the variegated browns and yellows of declining autumn.

Slowly she went into the intimate beauty of the hills, toward the cold purple silhouette of the distant continental divide. Something in it all spoke eloquently to her soul of the peace that broods above all the sandstings and bickerings of life. The very harmony smote with acute reproach upon her senses.

Before she was aware of it the descending sun had slipped over the jagged mountain edge and left her in darkness. She was startled to a sudden unease. Why had she not met her husband? And where was she? Walking lightly and strongly with the new power the hills had brought her limbs, she had followed a trail that led out of the canyon to the hilltops above. From one to another she had gone, breathing a deep response to the appeal of blue sky and wide spaces.

She turned to retrace her steps, following a gulch that seemed to offer a short cut to the big earth rift she had left. It was after this had led her to a blind draw terminating in a timber fringe that she acknowledged she was lost.

Blindly she wandered, for hours it seemed to her. Not without courage—it needed all she possessed to meet the great emptiness of the black hill night. They were so great and unpitying. With all the ages behind them, they had no care for her small terror.

With a great desire she longed for her husband—to comfort him in his trouble; to be comforted in hers. He meant to her now not only safety and comfort, but the love that wrapped her about. In a flash of insight she knew that there were no differences between them except those of their own making.

A rifle shot echoed in the still night, rolling from hill to hill and back again. She ran toward it, calling her husband's name as she hurried over sharp rocks and through brush that caught at her skirt. Miraculously all her fears were gone. She was as sure of her welcome as a lost child hurrying to its mother.

He dropped his gun when he saw her, and came hurrying across the rockslide that separated them.

His voice was tense with emotion as he cried: "O my love, I thought—you don't know what I have been dreading," he cried, and took her swiftly in his arms.

Her eyes glowed happily and she held up her lips to him.

"We have been wandering for five years, but we are home again at last, dear," she cried.

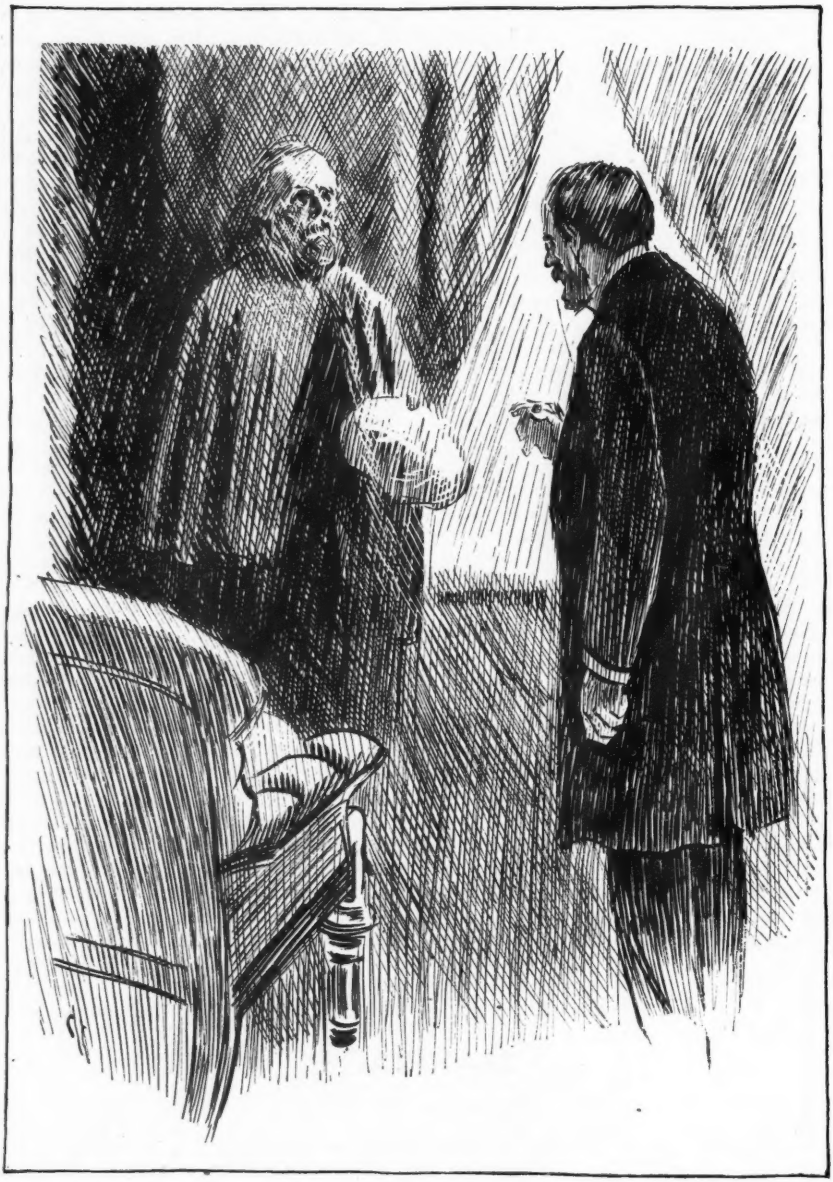
"Yes, at last," he answered, looking into the dear surrendered face he loved.

MARRIAGE

From the book "Heart Throbs."

Two volumes bound in one complete
With thrilling story old but sweet;
No title needs the cover fair,
Two golden hearts are blended there.

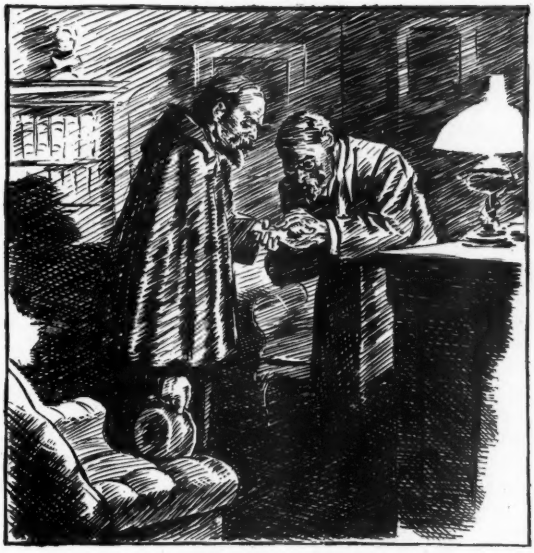
—*Mildred Merle.*



"In the dim light only a white arm and, if possible, a whiter face were visible."

The MAN WITH THE BROKEN ARM

By Andrew Sibbald



THERE are few things more terrible to witness than the spectacle of one whom we have known strong and healthy in the last extremity of a mortal illness, the approaching end clouding the brain and choking the speech, the curtain of death descending swiftly like a pall between him and the world, shutting him off forever.

From such a scene—the sufferer having dropped at last, exhausted, first into incoherent mutterings, and thence into the stillness of deep sleep—I stepped one night into the street, to walk the short distance that divided my house from that of my dying friend.

It was a fearful night: the wind wailed along the deserted pavement. As I neared my own door, a terrific squall came sweeping down, and as I stood still a moment and leant against it as though it was an invisible wall, I heard a door shut with a deep thundering bang in the cellar of some house far up the street. I bent my head to the storm and pushed on. "God have mercy upon the houseless!" said I, as I entered my house and pushed the door against the wind to shut it. I crossed the hall and passed into my library; there stood the lamp where I had left it when I was summoned, and the clock pointing at half-past one seemed to be saying in its tickings: "What a night to die in, what a night to die in!"

I fell into a reverie of another and fairer passing away in the summer light of other days, of a sofa wheeled to a western window, whence dying eyes could look out over the waves of the everlasting sea where the sun had gone down in glory of stillness and darkness and peace, coming down slowly, surely, over the world and over those eyes that looked then their last; and, thought I, as the wind wailed without and the clock kept up its pitiless repetition: "Truly, it is a fearful night for a man to die in, and the deaths of men are as different as their lives."

I was startled from my thoughts by someone ringing an imperious summons at my door. I rose and determined to see for myself who was there. I crossed the hall to the door. There was a lull in the storm when I opened it. A man was there under the portico, who at once addressed me: "Are you a surgeon?" I replied that I was. He stepped in, and I closed the door after him and led him into the library. "I wish you," he said, throwing off his loose cloak with one hand, "to doctor my arm." I now saw that his left arm had nothing upon it but the shirt-sleeve, and hung at his side, obviously broken; the rest of his person was dressed in sombre garments, indistinguishable from the books against which he stood, and in the dim light only

a white arm and, if possible, a whiter face were visible.

I opened my mouth to request him to approach the light, but either voice failed me or he did not hear me for the wind and rain that rattled the windows in their sockets, and the white arm and face remained where they were.

I took the lamp and brought it to the string-course of the bookcase close to him, and rolling up the sleeve, found the arm broken a few inches above the wrist. After a careful examination, I explained that it had better be set at once, to which he merely replied, "Very good"; and for half an hour nothing was said on either side as I went at my task with professional promptitude. I could not but admire the perfect composure with which the stranger endured what I knew must have been at certain moments exquisite torture.

When all was completed, the arm fixed immovable, and the cloak thrown over him once more, he passed into the hall. I opened the door and said: "It will require looking at," referring to his arm. "When will you come again?"

"I will come again," he replied, "when our friend is buried."

"What friend?" I gasped.

The light over my door illumined the immovable white features; the lips never stirred, but the eyes looked at me and said: "He whom you had left when I came."

"In the name of God," said I, "who and what are you?"

The stranger made no answer, but throwing his cloak over his mouth, strode away in the darkness.

How long I stood holding the door I do not know; my first conscious act was to hurry up the now quiet street to the house of my dying friend. The wind had now gone down, and the moon seemed to be careering through loose fragments of cloud that the storm had left scattered in its wake. When I reached the house, I found that death had been there before me; my friend had breathed his last about half an hour after I had left him. I asked whether he had been conscious at all before the end, and those about him replied that he had talked with emphasis about some matter that they could not understand, and that he had frequently mentioned some gauntlet about which, as far as they could comprehend, he seemed in great distress. This I attributed at the time to delirium, and after a last sad look at the peaceful face, I returned home sorrowful.

A few days after, the gloomy procession of hearse and carriages started from my friend's house to the cemetery. Chill and cold seemed the chapel as we rose to follow the coffin to the grave, while the white bare walls echoed again to the horrid tramp and scuffle of those who bent under their ghastly burden. As we passed out, a figure stepped from the side of the portico and joined the slow procession. In an instant I recognized the stranger whose arm I had set; he bowed gravely to me, and I returned his salutation. When we reached the grave, he took up a position opposite to myself, and I had leisure to observe, in spite of the ample cloak he wore, that he carried a parcel of some size in his right hand. When all was over, one by one the others departed, till the stranger and myself were left gazing down in silence upon the coffin. He came slowly round and stood by my side, but as I remained motionless and silent, he at last addressed me.

"I wish," he said, "to accompany you to your house; have you your carriage?"

I replied that it was waiting for me at the chapel, and we moved away together in that direction. It was dusk when we reached the carriage and got in.

The horses started for home; and, as it seemed to me in a very few moments, at a very unusual pace. I noticed, however, that rain had begun to fall, and supposed that the coachman was urging them on that account. My attention was quickly absorbed by the conversation of the stranger, who displayed a marvellous power of discourse. Starting, as was natural, upon the subject of death, he spoke of its solitude, in that a man, though followed through life by troops of friends, though caressed and beloved by many or by few, must at the last, when he comes to the gateway of the grave, leave all behind him and pass down in silence, unattended and alone—and I sat and answered him nothing. And as we went on faster and faster through the dark streets, the glimmering lamps threw flying gleams over the white face of the stranger while he talked on with increasing

power of the solitude of life; how that, did we but know it, a man was as alone in life as in death, and that none knows, nor ever can know, his neighbor's thoughts, nor his friend's heart of hearts; and I thanked God for that and answered him nothing. And the horses sped on till the steam from them enveloped and bleared the windows so that the lamps, whirling by, sent in no light; and his voice came from the darkness at my side, speaking of the solitude from which we come and to which we return, before and after this life; and because of the power of his words, I was afraid and answered him nothing.

And at my house door I would have bid him be gone in God's name, but that a nameless fear of him prevented me. Coldly I invited him to enter, and we passed together into the house.

In the library, at his request, I examined his arm and did what was necessary to it. When I finished this task, I asked him as politely as I could whether he had any further business with me, to which he replied that he would ask this single favor of me: that, inasmuch as he was leaving the country that night, it would be a kindness to him were I to take charge of a certain parcel which perhaps I had seen he carried, until his return.

I replied that I should have no objection; and, saying he had left it in the hall, he went out.

In a few moments he returned, saying: "Here it is; it is a gauntlet, for which I shall come to you again." This mention of a gauntlet brought some unformed recollection into my mind as I took it. When I faced him I saw a sight to freeze the blood! The man was holding out toward me the parcel he had carried at the grave side, but—with his broken arm!

I put out my hand in dumb horror to take it; I felt a sudden immense weight that my one hand could not support, and the bundle fell upon the floor between us with a crash. I glanced down at it for a bare moment, looked up and found myself *alone!*

I staggered round, caught sight of my features livid in the mirror, and knew no more till hours later my servants found me stretched at full length upon the rug, slowly recovering from a deep trance.

Before doing anything else, I sent everyone away and examined the bundle that still lay upon the floor of my room. It proved to contain, as he said, an iron gauntlet, but one of such enormous proportions that it was impossible to conceive a human hand gigantic enough to wear it. Where most safely to bestow it was my first thought, for, although the custody of so strange a thing was not of my seeking, I determined faithfully to fulfil my promise to keep it safe. I remember that there was an unused cupboard in the wall behind the head of my own bed upstairs, where it might forever be

"The closet was absolutely empty."

in perfect safety. I ascended to my bedroom, pulled out the bed, locked the great gauntlet into the cupboard and put the key on my bunch.

Summer came and went, and the man with the broken arm never came to fetch away his strange possession; time went on, and seasons passed away, till what I have recorded was fading from my memory, when, on the same day of the year, seven years later, after a terrible day's work at the bedside of suffering, I reached my house after midnight, spent and weary. I gave the coachman instructions for the morning, and then, as he drove away, turned to open the door.

Upon the steps, the light over the door falling upon his ashy features, stood a man whom I instantly recognized. I stood where I was in silence.

"I have come," he said quietly, "for that gauntlet"; and I said nothing, but opened the door, and led him, as I had done on the same day seven years before, into my library.

There stood the lamp as before it had stood, the clock pointing to the very hour and minute at which it had pointed before, and the interval of time seemed to have vanished at a stroke.

"Tonight," thought I, as I rang the bell loud and long; "tonight I will not be alone."

"I will fetch it," I said to the stranger, and going out, locked the study door behind me, and waited in the hall for my servant. In a few moments he came hurrying up.

"Now," said I, "stay you at this door and see that the man I have locked in there does not come out." I mounted to my bedroom, and pulled out the bed from the wall, exposing the door of the cupboard. I took the candle and put it on the bed where it would throw its light into the place when opened, unlocked the door, and looked in. It was absolutely empty! With a cry I fled downstairs, and hardly knowing what I did, called on my servant as he valued his life not to let the man escape, turned the key and burst into the library. There was no one there! Shutters barred—door locked—lamp quietly burning—the room—empty.

"You look ill, sir," said my servant.

"Ay," I answered, "I am."

I left the house next day, never to return. But one windy night, not long ago, driving past it, there, on the doorstep under the flickering light, I saw the stranger in his cloak.

"Ah, ah!" said I to myself, laughing, "they will want another tenant there soon."

As we passed on down the street, I lifted the flap behind me in the back of the carriage to take another look at the figure under the lamp, and saw, flat against the glass, close against my own, that terrible face, white and fixed!

ELEGIES AT EVENTIDE

By HENRY YOUNG OSTRANDER

LILAC and mauve and a lavender purple,
Gleam-lit by a glory of sunset gold;
While afar o'er the hills hangs the violet curtain
Aflame with the fire that's caught in its fold.

Fond Memory dreams in this twilight hour
Of the joys so dear that it used to know;
And Hearts love again with their old, sweet power,
As they live once more in the Long-Ago.

Lilac and mauve and the Soul's mourning purple,
Softly agleam with the evening gold;
In the dusk of the gloaming, 'neath cypress and myrtle,
The Spirit's sad Story must ever be told:—
Love's longing and burning,
Grief's mourning and yearning,
Where the gloom and the Glory together enfold!

A Modern Colossus

By Joe Mitchell Chapple

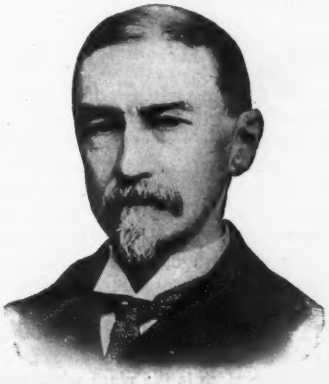
WHEN entering a modern American city, the features that appeal most strongly to an observer are its big office buildings, its varied industries and its banks, in contradistinction to the European idea of seeking first the handsome cathedral, guided thereto by its towering spires, or perhaps wandering through the mazy aisles of some celebrated picture gallery. However we may repel the thought, there is no denying that the American ideal of achievement today is closely allied with the genius of business. The age of cathedral building has passed, and now human effort is chiefly directed toward the erection of the walls and towers of magnificent temples of industry, and the inherent desire of the race for achievement revels in the splendor of industrial development; therefore, the eye of the modern artist finds wonderful effects of light and shade among the city sky scrapers.

Even in the attire of mankind changed ideals are apparent; the warrior no longer wears a gay uniform, glittering breastplate and helmet of the knight errant, nor even the light rapier of Washington's day. A khaki monotone has replaced "the pomp and circumstance of glorious war," even as the business suit of plain tweed and the dark Derby hat have ousted the beautiful coat, with finest lace at the edges of the sleeves, the embroidered waistcoat and the plumed hat that were in vogue one hundred years ago.

* * * *

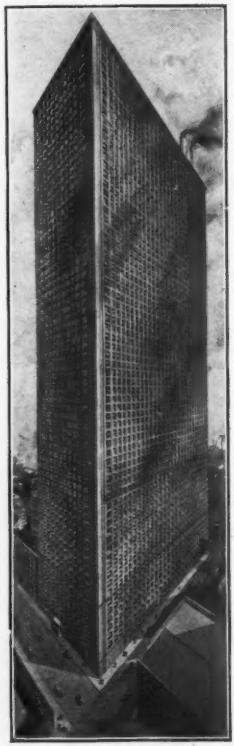
Absorbed in some such reflections I dropped off at St. Louis, and made straight for the sign of the "Keen Kutter," where, indeed, my theories seemed fully verified, for the battle axe of the medieval warrior remains only as incorporated in the heraldic trade-mark of a great modern business enterprise. Here the suggestion of the red man's tomahawk and the pioneer's axe, those small but especially practical weapons, was apropos. This trade-mark, today one of the best known in all lands, is stamped and imprinted upon goods that find a market in all parts of the world.

Looking down Ninth Street, I saw a group of buildings, on which the name "SIMMONS" stood out in bold relief, captioning the largest hardware stores in the world; for the Simmons Hardware Company has a trade development of such wonderful proportions that American literature would be incomplete if it did not record so great an industrial institution. Its founder and head, Mr. E. C.



Copyright 1909, *Simmons Hardware Co.*

E. C. SIMMONS
The founder of the greatest hardware sales organization in the world



An example of what the many buildings of the Simmons Hardware Co. would look like if combined in one—700 feet high and 190x225 feet ground area.

Simmons, has been more than a half century in the hardware trade, and is without doubt the best-known man in that branch of commerce today.

If the floor space occupied by all the buildings of the company should be incorporated into one and erected upon the site of their main offices it would look like the accompanying illustration and rise seventy stories high; or, if built in a one-story structure, it would spread over thirty-five acres.

* * *

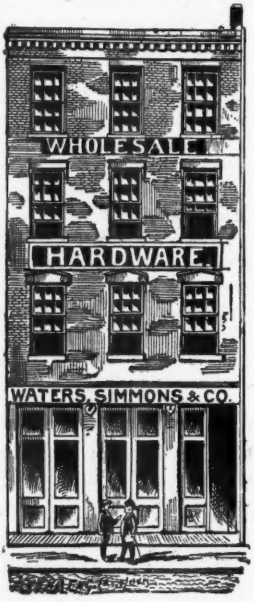
Whenever I see a hardware store, large or small, I think of dear old Ben Stanton's corner shop in the village of my youthful days, where the nail kegs under the counter held all sizes from threepenny to the most pretentious spikes; the shelves were covered with a heterogeneous variety of articles that were the wonder and delight of my boyish curiosity. Here the farmers habitually met and solemnly talked over the prospects of their crops, or the politics of the nation, incidentally buying tenpenny nails, axes, hammers and saws, and occasionally a new hinge for the barn door. No other trade, perhaps, is quite so essentially associated with the nation's growth; for neither house, gate, barn, fence or cradle can be made without hardware. Talk about the value of trifles—a hardware store is the place wherein this truism is exemplified. I have always thought that some hardware merchant must have suggested to Benjamin Franklin that impressive bit of verse:

"For want of a nail the shoe was lost;
For want of a shoe the horse was lost;
For want of a horse the rider was lost;
For want of a rider the battle was lost;
For want of a battle the nation was lost—
And all for the want of a horseshoe nail."

Not even the modern application of stone, brick and concrete can do away with the need of hardware, while buildings of fireproof, steel-frame construction are a practical development of that same hardware trade on a gigantic scale.

* * * *

As he enters the Simmons Hardware Store in St. Louis the visitor is greeted by a pleasant-faced young man who seems glad to see him. On a stand confronting the doorway, the mammoth catalog of the company shows illustrations, descriptions and prices of all commodities carried by the Simmons Hardware Company. This, the largest book of its kind in the world, registers over 79,000 separate articles, all illustrated, some in beautiful colors. This book contains more words than Shakespeare ever penned. Even the largest dictionary would be hard pressed to equal its number of words. This catalog is the numerical exponent fitly representing the present development of the Simmons hardware trade. A single glance at the giant book carried me back to the days when a representative of the company called periodically on Ben Stanton, laid just such a volume on the counter and whisked the pages to and fro as Ben made selections to stock his shelves. Today nearly



Birthplace of "Keen Kutter" in 1863

four hundred traveling salesmen represent this company in all parts of the United States, as well as Europe, Asia, Africa, South America and Australasia. These great books are carried by them in addition to samples, each salesman's volume being made up with loose leaves so that new lines may be added to show improvements or changes in price, without making a reprint of the entire page necessary. The hardware trade is singularly complicated, for every price is based on a system of discounts; that is, the standard price usually remains the same, but the discounts vary.

Entrance to general offices

The Simmons catalog was the first one published that fully explained every detail of every article—not only the width, style and size, but an accurate illustration as well. Here indeed is the literature of trade; and it seemed to me that if every hardware dealer would keep that catalog on a conspicuous stand in his store, where it could be easily examined by his customers, there would be little likelihood of the farmers buying from mail order concerns. If assured of free reference to such an unabridged and trustworthy authority, farmers would habitually come to the hardware store, sit down and make selections at ease, enjoying the assurance of getting exactly what was wanted without substitution, and articles of guaranteed quality. The time is coming when there will be as great a demand for such a work of reference as there now is for the city directory, or the local telephone book; and I am convinced that the Simmons Hardware Catalog will soon be found in every hardware store as a matter of course. Illustrating all hardware from the smallest tack to the electric crane—capable of raising tons of material—this catalog is as representative of the hardware trade as a city directory is of "all sorts and conditions of men."

In this encyclopedia of hardware supplies everything is so exactly indexed that it can be found at once, and the man in search of carpenters' goods or any other specialty can see at a glance just what he wants by consulting "the silent salesman." I was not

The Big Book Authority—the standard in the hardware trade of America

surprised when I learned that many orders intended for mail-order houses are daily being cancelled after the intending purchasers have consulted the Simmons Big Book.

In one department of the store I noticed that prices on all goods were swiftly found by means of a new indexing device, which enables the deft-fingered young men to slip over the pages and find the desired place in an incredibly short time. This guide on the edges of the leaves holds them so that they can be handled in half the time needed to turn over those of an ordinary book.

A large printing establishment is operated by the company, and their bulletins are issued almost with the regularity of a daily newspaper. As changes in prices occur they are printed and forwarded to the salesmen to incorporate in their catalogs. A little red or blue mark in the corner of the page indicates whether or not to put an extra "push" on a certain line of goods.

* * * *

The "Keen Kutter" trade-mark came by process of evolution. Mr. Simmons was buying a line of well-known axes and could not obtain them at the price he thought he ought to pay, so he immediately decided on getting out a guaranteed brand for himself. One night the name "Keen Kutter," came to him; the combination of the two sharp "K" sounds, suggesting the cough and cut of the woodsman's axe, was a happy thought, and this unique use of the initial letters soon attracted attention. Interest was substantiated by the sterling quality of the goods, and now it is always understood that O. K. and Keen Kutter are synonymous expressions.

Starting with axes, the line has grown to include all edge tools, both mechanics' and carpenters' tools, and typifies the highest product in hardware. It tells a story of long, hard work; of many experiments; of much intelligent thought, of original ideas.

The line stands absolutely alone; nowhere else is such a line to be found; so well balanced, harmonizing thoroughly, and of uniform excellence. There has been but one thought in the manufacture of "Keen Kutters," that of merit; continual improvement and insistence on the best—nothing short of that is satisfactory.

All conventional ideas and conditions have been thrown aside, and always original ways

Axe-handling department—an innovation that revolutionized the business. The first idea in selling axes with handles was originated by Mr. E. C. Simmons.

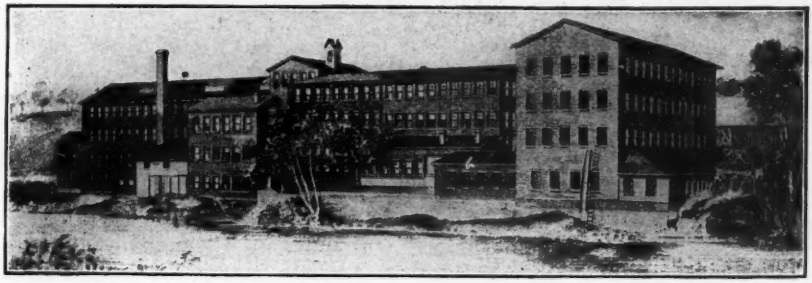
and methods have been sought to still further improve the line in quality, in finish, appearance and design.

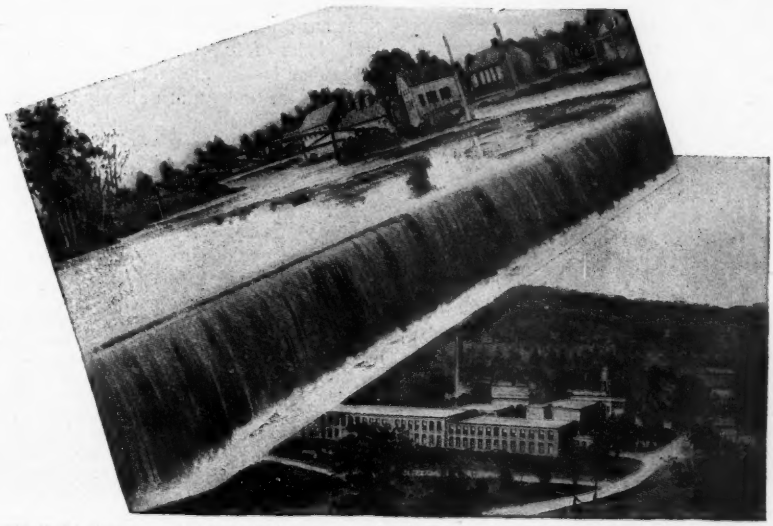
A most intelligent, systematic and continuous plan of advertising carries the story of desirability of "Keen Kutter" goods to everybody, everywhere. It is a continuous performance—no breaks, no intermissions, and there is always something attractive upon the stage.

The phrase—"The recollection of quality remains long after the price is forgotten"—also originated with this firm, and has become the Simmons slogan, far-reaching as any pibroch that ever thrilled along the purple heather of the Scotch Highlands, and as axiomatic as that other expression originated by Mr. E. C. Simmons—"The first duty of a jobber is to help his customer to prosper."

* * * *

In one department of the store the keen-eyed buyers of the firm were at work, looking over goods sent from their Eastern factories; when approved by these experts, the various articles are packed in neat wooden boxes, marked with the "Keen Kutter" trademark, and are forwarded to the various markets demanding these goods. The American people have come to recognize this mark as a standard of quality, and after the salesman has placed his first order with a dealer, the demand for the line is continuous—the best





1. The Walden factory; employs 535 skilled workmen, where "Keen Kutter" pocket knives are made. 2. Water power. Water power is used for both factories. 3. Location of "Keen Kutter" tool factory among New Hampshire Hills

Inspecting Room—where all goods short of perfection are rejected

assurance of re-orders being the superlative quality of these goods.

Its varied and enormous stock shows that the Simmons Hardware Company comprehends the needs and wishes of the people and anticipates them. It also seems to have the faculty of knowing when things are going out of date, or when they have had their day, and consequently drops them, saving space that would otherwise be taken on the shelves and in the pages of the catalog. In other words, their stock consists of "Is-ers" and "Going-to-bes" without the "Has-Beens."

Their fortunate location of headquarters in St. Louis, the center of the constructive area of the Middle West, enables them to keep in touch with the needs of the trade all over the country, and their output has practically no territorial limitations. Many branch houses are being placed in the principal distributing points throughout the country, and Mr. W. D. Simmons constantly keeps in touch with men and affairs of importance, and spends his entire time looking after the increasing possibilities of the trade, which already aggregates eighteen million dollars, or more.

"Keen Kutter" hatchet used 31 years

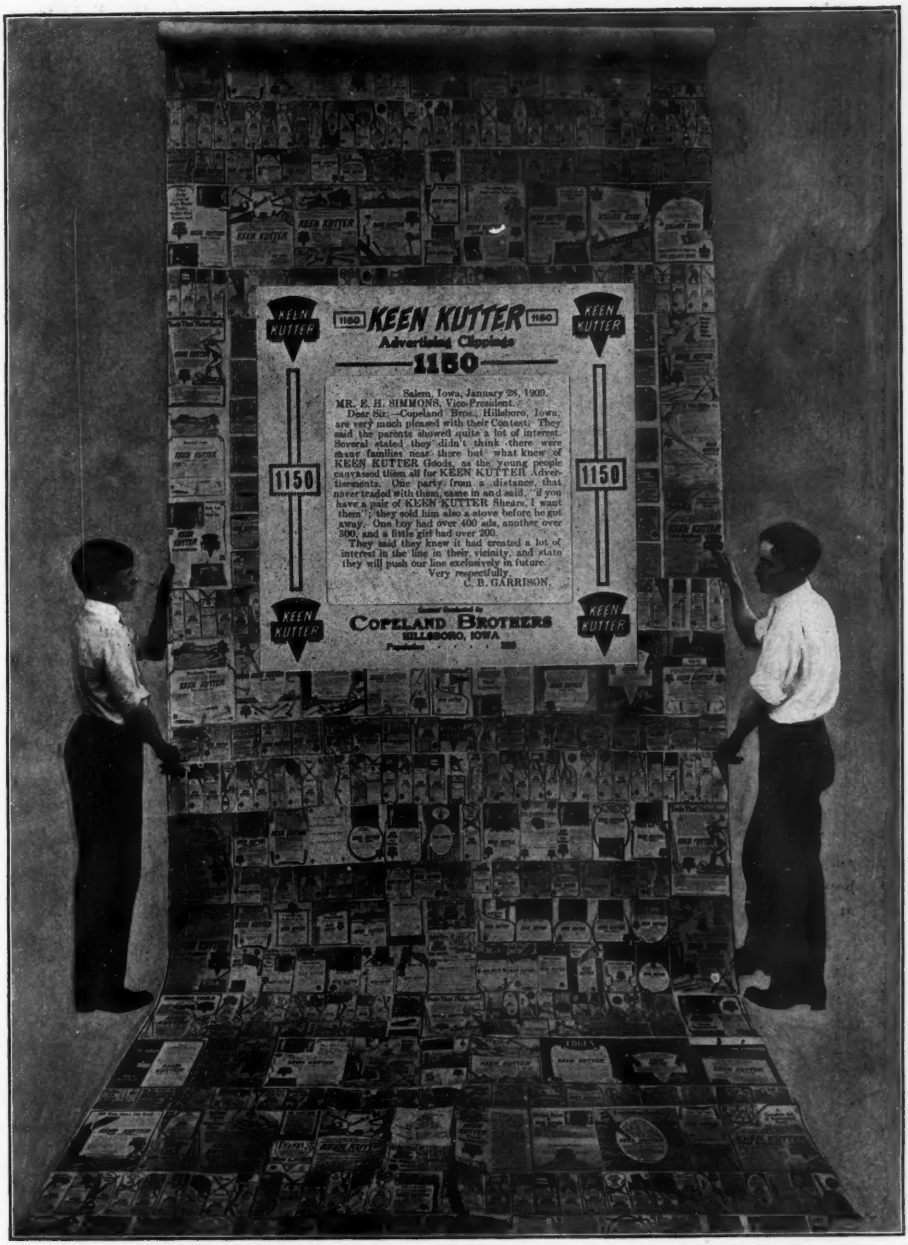
T. B. LONG HARDWARE COMPANY
27 and 29 East Washington Street
PHOENIX, ARIZ.

January 11, 1901.

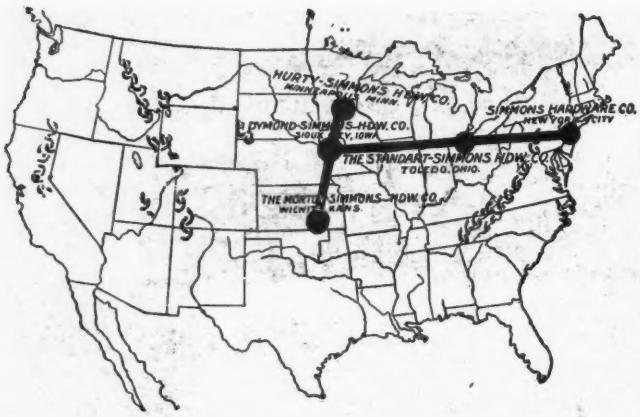
MESSRS. SIMMONS HARDWARE COMPANY,
St. Louis, Mo.

Gentlemen: This hatchet was bought by J. B. Long of a Mr. Pierson (who ran a store in Breckenridge, Mo.) in 1872. In December of the same year it was taken to Grand Rapids, Mich., in 1878 it was carried to Manistee, Mich., in 1881 to Fresno, Cal.; in 1883 to Phoenix, Ariz., and again, in 1885 it was carried to Fresno, Cal.; in 1886 it was again taken to Phoenix, Ariz., and has been in constant use as a household tool for the entire time. The handle in the hatchet is the original one—it never having been broken, and the hatchet has been used by three generations.

Yours truly,
J. B. LONG.


KEEN KUTTER
1150
KEEN KUTTER
Advertising Clippings
1150
Salem, Iowa, January 28, 1900.
MR. E. H. SIMMONS, Vice-President.
Dear Sir:—Copeland Bros., Hillsboro, Iowa, are very much pleased with their Contest. They said the parents showed quite a lot of interest. Several stated they didn't think there were many families near there but what knew of KEEN KUTTER Goods, as the young people canvassed them all for KEEN KUTTER Advertisements. One party from a distance, that never traded with them, came in and said, "if you have a pair of KEEN KUTTER Shears, I want them"; they sold him also a stove before he got away. One boy had over 400 ads, another over 300, and a little girl had over 200.
They said they knew it had created a lot of interest in the line in their vicinity, and state they will push our line exclusively in future.
Very respectfully,
C. B. GARRISON.
Contest Conducted by
COPELAND BROTHERS
HILLSBORO, IOWA
1150
1150
KEEN KUTTER
KEEN KUTTER
KEEN KUTTER
KEEN KUTTER

In a little town of only 325 inhabitants these 1150 "Keen Kutter" advertisements were found and clipped from magazines, trade journals and newspapers. It is conclusive evidence that "a most systematic and continuous plan of advertising carries the story of desirability of Keen Kutter goods to everybody, everywhere."



Cross-cutting the area of distribution—local houses insure quick deliveries to dealers

An incident was related to me in Denver which may explain why the branch houses of the company came to be located. A dealer in North Dakota was called upon years ago by a Simmons representative, and while he preferred "Keen Kutter" goods, he explained that he was building a ten thousand dollar home and could not then afford to carry a large stock of goods in his store.

While the quality of the "Keen Kutter" was better and the prices quite as satisfactory, it seemed expedient to send frequent small orders to Sioux City because they could be procured in less time and at less expense for freight than from St. Louis.

There was logic in the dealer's arguments, and it was not long before several local houses of the company were centrally located at such points as Minneapolis, Sioux City, Wichita, Toledo and New York City, and these are now distributing warehouses for their respective territories. In this connection perhaps birth was given to two business maxims—one, which Mr. E. C. Simmons gave to his customers, "Buy often in small quantities;" and the other, "Promptness is the essence of good business," he posted in every part of his great establishment.

Perhaps no other rule are the employes urged to regard more strictly than immediate attention to all orders and inquiries. Fully ninety-five per cent. of all orders are filled the day they are received, and it is an invariable rule that every inquiry about prices on prospective orders must be answered by return mail. What is more, the invoices are priced and bills mailed to reach the buyers when, or before, the goods come in.

It means much to a country merchant, whose knowledge of finance must of necessity be limited, to have the personal interest and attention that is given him by this company, especially in times of doubt and business depression. In the dark days of the panics of '73, '93 and '07, many a retail merchant was saved from ruin by the kindly advice

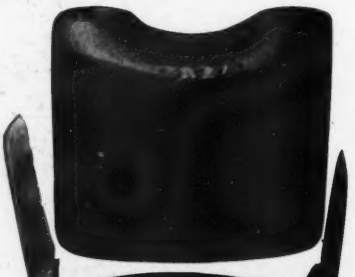
"Lockesburg," Ark., September 7, 1905.

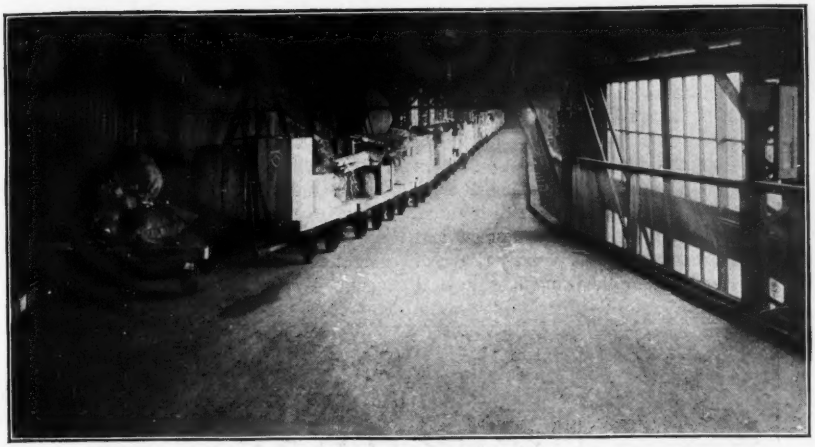
TO WHOM IT MAY CONCERN:

This is to certify that with this "LITTLE KEEN KUTTER" knife alone, four prisoners cut their way to Liberty at Lockesburg, Arkansas, on or about the first day of April, 1905. The said prisoners were confined in Pauley steel cells, and in order to accomplish their escape it was necessary for them to cut the shackles on two large jail locks, and this they did.

Said prisoners would have escaped, but just as they succeeded in cutting their way out the Deputy Sheriff arrived on the scene and apprehended them, taking from them their only weapon, "THIS LITTLE KEEN KUTTER" with which they had cut their way out.

W. F. THOMAS,
Deputy Sheriff, —— County, Arkansas.





Bridge between storage warehouse and shipping station. Incoming and outgoing freight resembles a busy city street

and admonitions of the far-seeing business man at the helm of the Simmons Hardware Company, who had trimmed sail and made everything fast before the financial storm broke upon his ship.

It was a matter of comment many years ago, when the house was first coming into prominence, that its success, at which all wondered and some caviled, was due to organization and discipline. This was only half the truth, since it takes a master mind to perfect an organization and discipline such as has accomplished the substantial success of this company. Probably in no other organization in the world are the results of personality, knowledge of human nature and sentient forecast of coming conditions more conspicuous than in the last fifty years' history of Mr. E. C. Simmons at the head of the Simmons Hardware Company. And, as is the power that is sometimes seen in a great master of learning—the power to fire the spirit of emulation in his boys and girls—so have the precepts and example of their employer seemed to energize those connected with the house from office boy to chief clerk.

Seventh floor of warehouse—extending three city blocks

Everywhere is the spirit of enthusiasm—the spirit of belief in the honor of the house and its methods. It is the spirit which cannot be bought, cannot be imitated, but is the inoculation, or the inspiration, of the genius of one man.

Mr. Simmons' methods have not only been original, but most simple; so simple that some theorists have failed to recognize their value. He has inculcated upon his salesmen and office force alike the merits of early rising, of tact, good nature, of knowing how to deal with men—when to be aggressive, when to be patient—of setting a high standard and living up to it day by day, of getting the confidence of customers, and most of all, of keeping up good courage under discouraging circumstances, realizing that intelligent, systematic work will always win in the long run.

Every valuable suggestion or piece of information coming from the company's salesmen or other employes is utilized; the alertness and aggressiveness of the entire force is apparent in some of the specialties put out from time to time. Take the "Keen Kutter" Safety Razor; its excellence won popularity because it filled a long-felt want. The same is true of the Combination Tool Cabinets, which have done so much toward the industrial education of boys. The lads don't waste time now with discouraging toy tools, but are stimulated to make useful articles with "real" tools, "just like father's." Those little chests reminded me of how I struggled years ago to secure several subscribers for the *Youth's Companion* that I might get a toy tool chest. If I were a boy again, I would be ready to canvass the country for miles around, barefooted if necessary—to possess such an outfit as is now contained in one of these superb "Keen Kutter" tool cabinets.

Portion of Sales Department—where quotations are made and special inquiries answered the day received

* * * *

In every department of this establishment there was alert activity that inspired enthusiasm; it is quite evident that the president of the Prosperity League and founder of the Simmons Hardware Company is also dean of a university of salesmanship, for this modern art is highly developed in this firm. The letters and bulletins sent out by Mr. Simmons

to his traveling men are veritable classics, wherein he outlines every detail necessary to the securing of an order or the holding of a customer. The two great principles of creating desire and satisfying it are thoroughly understood by him. In one little paragraph he says: "Keep your eyes open in listing long orders. Suggest to the dealers just what their stocks lack; put yourselves in their places; don't merely ask: 'Is there anything more?' but suggest articles they ought to have."

Mr. W. D. Simmons, the present head of this company, takes infinite pains to keep in touch with the personality of each traveling man, and through him with each customer. On the wall in his office is a large map of the United States of America and of Mexico, on which little round cards of different colors are placed, indicating the territory of the traveling men of the various departments. Thus, St. Louis and environment might be marked with blue, Toledo with red, Minneapolis with brown cards, New York with green. On each of these distinguishing marks is a portrait of the traveling man, and a little colored arrow pointing upward means that his sales are rising; should the arrow point downward, it tells a mournful tale of decreasing sales. The colors also have a significance as to the profits on the goods sold. An accurate account of all individual sales is kept. Every encouragement is given to the Simmons salesmen, whose revolutionary and active methods are proverbial throughout the country. They are salesmen, keen observers and scouts of industry; their reports on crop conditions and other matters of importance have been so accurate that it has been possible to forecast the future of various sections as accurately as though information had been obtained from a government expert. These returns are frequently revised and verified, especially on the wheat, corn and cotton crops, which are regarded as the barometers of prosperity. Upon the deductions drawn from these reports are based the company's orders for goods to be delivered for the following season. Last year a forecast was made, purely for business reasons, of political conditions months before election time; the prediction was remarkably accurate concerning every state.

No time for frivolity. The bills and dray tickets must be made out quickly

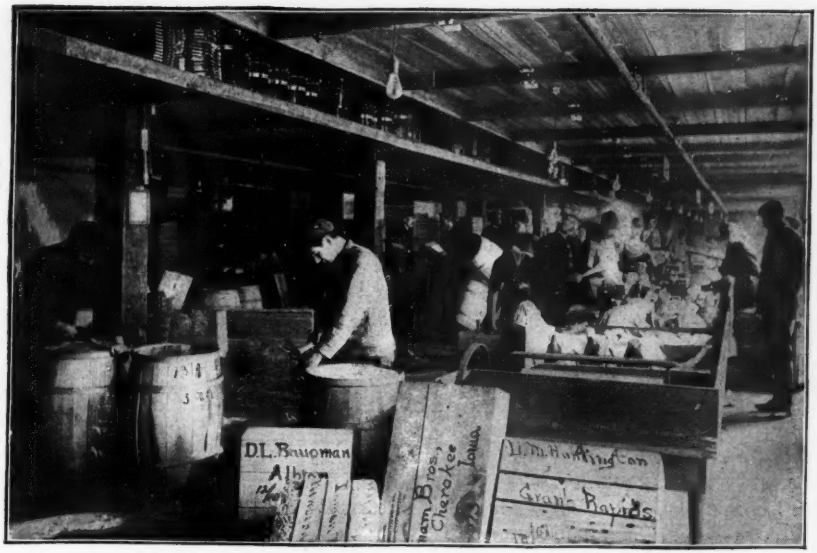
In some instances the salesmen are face-

Where goods are assembled and packed up for shipment

tiously classified as "long horns" and "short horns," and they are moved up and down the list from the "muley" to the "long horn," which latter title is coveted because it stands for big orders. One "long horn" has visited nearly every country in the world and has sold "Keen Kutter" goods even in Sheffield, England, and in Amsterdam; the Simmons standard of quality enabling the salesmen to dispose of their goods in any market.

The bulletins issued by the president only for the private perusal of his traveling men are unique literature; and it is a loss to the public that these will never be printed for general circulation. They are "heart to heart" talks between the head of the house and his salesmen. An opening paragraph starts somewhat like this: "Orders galore;

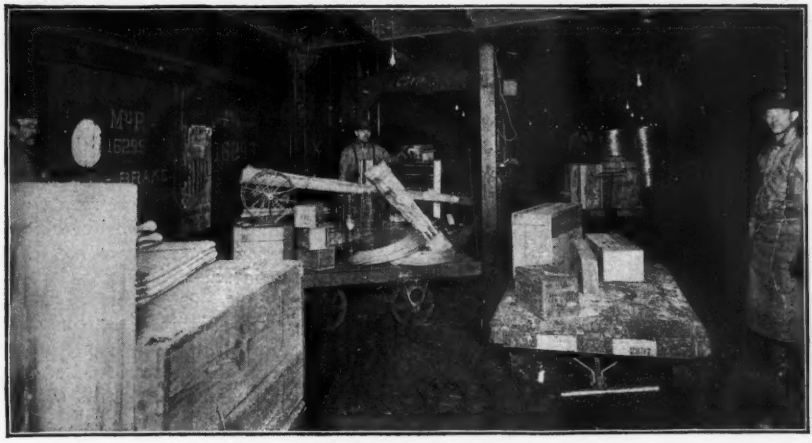
Cupples Station, the only one of its kind in the world—where shipments of goods are delivered to the railroad companies and their receipts taken



One of many busy packing rooms—Lamp and Tinware Departments

morning after morning, coming thick and fast—sorry to say many are small, some bob-tailed, and too many are coming from short horns."

Another department maintains a correspondence with every retailer. It is known how he is situated in regard to business matters, and in just what condition he is financially; whether he has suffered by fire, or lost a member of his family. In any case he is made to feel that the company is interested in his welfare, and it is not surprising that many retail hardware dealers are identifying themselves more closely with the Simmons Hardware Company and are calling their places of business, "Keen Kutter Stores." It is understood that such a sign over a hardware store indicates a high grade of goods within.



Cupples Station—Loading Platform

Panoramic view of Sales, Traffic

In the office of the vice-president, Mr. E. H. Simmons, I noted another evidence of this personal and kindly interest, when I was privileged to read a letter written to Mr. I. W. Morton—one of the early members of the firm, who died some years ago—by his partner, Mr. E. C. Simmons. Every line breathed that tender friendship which springs direct from the heart, and which is not often found to exist among business men. It was one of the sweetest, most sympathetic missives I ever saw in any commercial office, and exhibited another side of the character of Mr. E. C. Simmons, a man of high ideals, firm purpose and indomitable power.

Every department in that great store had something of peculiar interest. I paused to watch with delight the "Keen Kutter" mail opener, grinding off the edges of the envelopes with a sandpaper belt. It had opened 10,000 letters the day that I was there; having been opened by this rapid device, the mail matter is distributed into a circular sorting "post office" and then dispatched to the various departments, where each letter receives quick attention. It was equally interesting to watch the automatic machines sealing the letters for the outgoing mail. No time is lost in answering a letter when received, and the utmost celerity is shown in getting outgoing letters into Uncle Sam's mail bags.

Private telegraph wires run into the office; local and long distance telephone booths are conveniently located in all parts of the establishment, showing the modernity with which this business is conducted.

In another department I saw the carefully tabulated crop and trade information from each state; everything is classified in such a way that any desired item can be looked up in a few moments. In one corner were Ohio records; in another, New England; in another, Kansas—every state was represented—a veritable national institution. Salesmen seemed to vie with each other in sending in five and seven page orders for supplies of "Keen Kutter" hardware. I bethought me that some novelist is missing a glorious opportunity in not writing about the romance of such a great business house.

The novel sanded belt mail opener—averaging 10,000 letters a day

and Billing Departments. Seventh floor

Like Columbus, the Simmons Hardware people are determined to "sail on" in every department. The forward movement is evidenced in the typewriting department by a sort of cyclometer fitted on every machine; it registers every line, and workers are paid by the quantity of work done, with due deductions for errors. Men stenographers don't pause to chew tobacco; the girls don't stop to arrange their hair—no plans for the evening are made, but there is an incessant *qui vive*, like contestants for the "hundred-yards dash," and fingers gallop unceasingly over the keyboards. "No room for shiftless trifling here," murmured I, as I watched.

* * * *

Since 1896 the active management of this great establishment has been taken upon themselves by the three sons. Mr. W. D.

Dressed window models—Illustrations mailed to all retail hardware dealers

Simmons, as president of the company, manages the financial affairs and has charge of all local branches. As vice-presidents, his brothers, E. H. Simmons, in charge of the mail order department, advertising, printing, etc., and George W. Simmons, giving his personal attention to the traffic end of the business, i.e., the incoming and outgoing merchandise, exemplify the adage that "in unity there is strength." Fully equal to the trust that their father has transferred to them, their most heartfelt wish is that complete rest, after so many years of successful activity, may prolong the life of their honored sire for many years to come.

KEEN KUTTER
G.W. SIMMONS, Vice Pres. AND TRAFFIC MANAGER
KEEN KUTTER
COPYRIGHT 1909 SIMMONS HARDWARE CO.
W.D. SIMMONS, Pres. SIMMONS HARDWARE CO.
E.H. SIMMONS, Vice Pres. MANAGER MAIL ORDERS - ADVERTISING, PRINTING, etc.

The great success of the Prosperity League of 1908 will always be associated with the name of Mr. E. C. Simmons. His courage in facing depression and fighting for prosperity in the teeth of the 1907–08 panic was a rare evidence of patriotism. There were obstacles to overcome, but Mr. E. C. Simmons called together the more optimistic and courageous of St. Louis' business men, with the result that in one day over 18,000 people were re-employed by St. Louis houses, and millions in wholesale orders were placed simultaneously with different firms. This did much to bring back confidence, and that was really all that was needed. No other one thing could have done so much to hasten the return of normal conditions, and the splendid, united efforts of the business men and manufacturers of St. Louis are an object lesson that will long be remembered by the nation.

On "Re-employment Day" the Simmons Hardware Company alone mailed orders to factories for $1,000,000 worth of goods, being chiefly small articles that would later be distributed over a wide area—and this was but a single act on the part of one American firm of patriots.

When the romance of commerce is written, it will be seen that the modern commercial republic is not less fruitful in proofs of patriotism than were those republics over whose history the flight of centuries has thrown the twilight glamour of the past. When the historian and the poet tell the story of these days, such lines will be penned that even the story of "How well Horatius held the bridge" will lose its time-honored place in the heart of the schoolboy, who will prefer, when he mounts the school rostrum, to tell "How brave St. Louis saved the day in the panic year nineteen-o-seven," and the patriotic merchants and manufacturers of that city will be regarded as national heroes.

THE POWER OF PUBLIC CONFIDENCE

By MITCHELL MANNERING

THE name of George Bruce Cortelyou is closely associated with those of four great men of the nation—Cleveland, McKinley, Hanna and Roosevelt; in his work connected with their distinguished careers, as in all his governmental service and business enterprise, the name Cortelyou has always inspired confidence in the hearts of his fellowmen—in fact, Cortelyou and confidence have become almost synonymous terms in the minds of the American people. Serving directly under three Presidents, his personality has always stood out in strong relief, and throughout all his activities, no matter how busy he might be, he never forgot to see that everyone was fairly treated, and that equal courtesy was meted out to all alike—he was the first to insist that business courtesy, urbanity and amenity should characterize public service at the Capitol.

Probably no man in the service of the government has been so sedulously careful to secure accuracy in every statement made under his supervision, and instances are known where he took pains to send, at his own expense, telegrams of a hundred words in length, in order to correct statements and avoid misunderstandings.

Unlike many of his predecessors in office, he adopted strictly business methods in all his work as the secretary of three Presidents—Cleveland, McKinley and Roosevelt. Mr. Cortelyou has also held three cabinet positions—Secretary of Commerce and Labor, Postmaster General, and Secretary of the Treasury—achieving distinction in each and reversing the usual course of a successful political career. Such men commonly begin in commercial life and then round out a successful business record by taking public office, but Mr. Cortelyou, beginning at the very bottom of the ladder in Washington, has relinquished his political prospects to become the head of a great business institution.

At Irving Place, near Fourteenth Street, New York City, near the old historic Academy of Music, I found the headquarters of the Consolidated Gas Company, in whose front office hundreds of people daily come and go, paying bills and receiving refunds. This is the largest gas company that has ever existed—in fact, it closely rivals in importance the giant steel corporation and other large enterprises handling millions of dollars; it includes all the gas companies in Manhattan—the New York Mutual, Standard Gas Light, Westchester Lighting, United Electric Light & Power, New Amsterdam Gas, East River Gas Company of Long Island City, Central Union Gas, Northern Union Gas, Astoria Heat, Light & Power and New York Edison Companies. It has a capital of $100,000,000.

President Cortelyou took over charge of these vast interests in the latter part of March last, assuming control just after the Supreme Court decision established an eighty-cent gas rate in New York; it has been under his incumbency that the larger part of the $12,000,000, which had been collected on gas bills at the dollar rate pending the decision, has been refunded. Over $9,000,000 of this money has already been returned to consumers, and the work is proceeding at the rate of $500,000 per week, the refunds being paid as promptly as the agents can verify and report on the rightful claimants.

The thing that most impresses the visitor making his way through the throngs crowding the threshold is that there appears to be a new relation established between the public and the corporation. Throughout the establishment such courtesy and consideration are shown to all comers as are tendered to customers by the salesmen in a first-class store, where goods are for sale, and the comfort and convenience of the public are considered as a pre-eminent business proposition, just as important as the acquisition of new patrons or the prompt collection of bills. Regardless of social standing or amount due on monthly bills for services, the most courteous consideration is shown to all comers at the offices of the Consolidated Gas Company.

The first purpose of Mr. Cortelyou was to establish good relations with the public—the patrons of his company; he felt it to be of the utmost importance that the confidence of the people should be gained in order that they might co-operate in the plans for the future. Mr. Cortelyou's plans are still in their infancy, and how well they are maturing only those who are familiar with all the details of the work know. His energies are concentrated on the improvement of all relations with the public, especially in regard to reducing unnecessary expenses and giving everyone the best possible value for money expended.

This largest gas company of the world produces fifteen billion cubic feet per year, being about 40,000,000 feet per day, and recent reports and investigations of the company show that gas is rapidly becoming a great, cheap and popular substitute for other fuels. For general purposes it is claimed as the most economical fuel at present known, and its popularity as fuel is proven by the fact that only about one-third of the gas consumed in twenty-four hours is used for lighting, indicating that fully two-thirds of the gas burned in New York is used in the day time. In a recent "gas census" it was found that out of 9,500 apartment houses visited ninety per cent. used gas exclusively for fuel. On the contrary, reports on electric light show an increase in night consumption, and also that it is being used more generally than ever as an illuminant. A goodly portion of the stock of the Consolidated Gas Company is held by trust estates, and Mr. Cortelyou feels that his responsibility to his employers is best fulfilled by making the company a popular and efficient institution of the Giant City of the world. A corporation should be organized fundamentally on a democratic basis, and his idea is to bring company and consumer into closer touch, eliminating by a more perfect understanding all waste and friction, and benefiting alike stockholder, company and consumer.

Coming directly from his work in Washington to become the head of this great business, Mr. Cortelyou is conducting a private corporation on the basis of a public-utility organization by methods that are truly characteristic. Already the spirit of friendliness and co-operation, uniting the Consolidated Gas Company with its patrons, offers an object lesson proving that when fair play is assured to company and clients alike all need for the old-time friction is at an end. Mr. Cortelyou believes in absolute candor, and tells the whole truth about assets and profits. He will have an efficient organization, through which the people can obtain the greatest possible value and most perfect service for their money in return for their confidence in and co-operation with the Consolidated Gas Company.

Such management of a large corporation opens up wonderful and unforeseen vistas. His methods are as far in advance of former business procedure as our modern system of lighting is ahead of the feeble ray of the tallow dip, with its little circle of light, barely enough to permit two people to read or sew. Even the good grandmother who refused to have gas in her house, declaring that she "would not tempt Providence by taking her life in her hand every hour, and incurring the constant risk of explosion," would have accepted and rejoiced in the better illumination of her rooms if she could have purchased gas from a company as reliable as one operated on Cortelyou's methods. Street car passengers may now ride as far for five cents as they did years ago for fifty; advantages enjoyed by gas users have increased in equal ratio but "the best is yet to be—the last for which the first was made." With a complete understanding between producer and consumer, every citizen will have the benefit of every improvement and every invention put forth by the brains of the nation. Modern business men regard these as national assets on which every individual ought to receive a dividend in some form.

The bright, well-lit home is now the rule, not the exception, and the workingman of today has better light to read or work by than the millionaires of half a century ago. The real object of organization is attained, for an invention that benefits only a few of the privileged class is hardly worth having; the more widely it is distributed, the more truly it is the possession of the nation.

* * *

In the same cool-headed, kindly way in which Mr. Cortelyou is today managing the Consolidated Gas Company, he took up, years ago, the organization of new governmental departments. One of the most in-

teresting tasks ever assigned to him was the organization of the Department of Commerce and Labor, from foundation to rooftree, and that department will always be associated with the name of George Bruce Cortelyou.

Perhaps his greatest public record was made as Secretary of the Treasury, when his coolness and firmness averted one of the most disastrous panics that ever threatened the country. During those few days, Mr. Cortelyou lived years, never for a moment shirking the responsibility thrown upon him. The President was absent, the cabinet scattered, so that he was practically alone at Washington, grasping firmly the severed arteries of finance that threatened to drain the life blood of our national prosperity.

Though I have seen and known him in all phases of his career—when he was a clerk in the post office, when he served three Presidents and filled three of the most responsible cabinet positions, when as Chairman of the Republican National Committee he led his party to victory in 1904, and today as head of the largest public-utility corporation of New York—never have I more enjoyed being with him than when, on that memorable day at Exeter, together we watched the ball game in which his son participated as pitcher and manager of the team on the day of his graduation. Together we wandered over the old campus associated with the memory of Webster; together we noted the splendid young fellows there, brown-armed, bare-headed, active, wide-awake. Later at the station we saw the same lads toss their grips about like rubber balls, glad to be going home, but full of loyalty to "dear old Exeter." That day Mr. Cortelyou showed not only his keen interest in education, but his hearty, affectionate sympathy with the young men of America.

As executor of the McKinley estate, yet another side of his character is revealed. For years he has been gathering material for a McKinley Memorial Biography, to be published some years hence. He has aided greatly in raising the McKinley Memorial Fund, which now amounts to $675,000 for the memorial proper, in addition to a fund for its perpetual care and maintenance. Speaking of this work, he paid a hearty tribute to his associates, describing them as "the finest lot of business men who ever came together."

The career of President Cortelyou shows his marked ability to adapt himself to whatever conditions of work may come his way. Though still a young man, his career furnishes an interesting example of the possibilities of American life, and has proved an inspiration to a greater number of young men than will ever be known. His intimate association with the McKinley administration identifies his career with one of the most thrilling and pathetic periods of American history. If questioned, Mr. Cortelyou would say that there is nothing in his public life that he treasures more than his memories of his association with the beloved chief, and those who know him best realize that he regards it as a high privilege to have been permitted to serve, faithfully and well, so great a man as William McKinley.

BUILD A LITTLE FENCE

From the book "Heart Throbs."

Build a little fence of trust
Around today;
Fill the space with loving work
And therein stay;
Look not between the shelt'ring bars
Upon tomorrow,
But take whatever comes to thee
Of joy or sorrow.

What West Virginia is Doing!

Figures that show the remarkable growth and development of a great state, and the opportunities that it offers.

AREA ..... (miles)	24,715
Longest line east to west	274
Longest line north to south	245
POPULATION	1,250,000
NAVIGABLE RIVERS ..... (miles)	600
Ohio	300
Monongahela, Little Kanawha, Great Kanawha, and Big Sandy—Locks and dams —	300
RAILROAD MILEAGE	4,000
Three trunk lines from east to west. Two additional roads to Atlantic seaboard. Two additional lines to lakes. Four routes from south to north.	
COAL PRODUCED LAST YEAR ..... (tons)	50,000,000
Transportation charges	$100,000,000
Wages paid miners	30,000,000
Number workers	60,000
Dependent on workers	300,000
OIL PRODUCED LAST YEAR ..... (bbls.)	15,000,000
Value	$26,000,000
Workers	9,000
Wells	13,000
NATURAL GAS—Value last year	$8,000,000
MANUFACTORIES:	
Capital invested	$ 87,000,000
Value product	100,000,000
Number workmen	44,000
Glass factories	39
Iron and steel and rolling mills	12
Leather, tanneries, etc.	33

Largest pottery in the world. Cheap raw material and cheap fuel.

WEST VIRGINIA'S GREAT RESOURCES

By NATHAN BAY SCOTT
United States Senator

A WONDERFUL future is in store for West Virginia and the entire South. West Virginia became an individual state only forty-six years ago, and her development of manufacturing interests, during the last thirty years, has been more marked than that of any other part of the United States.

Nature has indeed been kind to the "Mountain State" and provided her with the two great essentials—cheap raw materials and an abundance of fuel wherewith to manufacture it. The mountains are stored with a seemingly inexhaustible supply of riches, and the green valleys stretch out before one, presenting the ideal pastures of an agricultural country.

The coal supply of West Virginia is almost inexhaustible, and the value can scarcely be estimated. It has been said that this state alone could supply the coal markets of the United States for nearly two hundred years. Her wealth in petroleum is unestimated. Last year the oil output was valued at over $26,000,000. The value of her natural gas production amounted to $8,000,000.

But these three items, while wonderful, show only part of the resources and wealth of the state.

New gas and oil wells are constantly being opened up, and new coal territory is being developed. The beautiful forests of the state are rich in hard woods, and by far the larger portion of the land of the state is in forests. While great demands have been and are being made on the supply of hard wood, still there is an abundant supply; some of the largest tanneries in the country are located here.

The pastures of the state are rich, and the stock raised on them brings very high values in the markets of the East. The sheep industry is flourishing, and West Virginia wool is considered of most excellent quality.

The protective tariff under which this country has prospered for many years is largely responsible for her development and that of the entire Southland. It has brought forth much wealth in minerals, oils, etc., which otherwise would have remained undiscovered. It is this development which is rapidly changing the sentiment of the South from free trade to protection.

West Virginia is inviting capital to come to the state and can offer it great returns. The population of the state today is over 1,250,000. Thirty years ago there were only about eleven millions of capital employed in manufacturing; now there are over 5,000 manufacturing establishments with upward of $87,000,000 of capital invested. Thirty years ago the annual wages of the miners was $800,000. Now, in round numbers, it amounts to $30,000,000. The value of farms has practically doubled in that time.

Coal is perhaps the largest industry. Six great railways, three of them being trunk lines, traverse the state at present. The last road, which was only recently opened up, runs through a section which has been declared by experts to be the richest bituminous coal field in the world. This new road was built and these new coal fields opened up with the understanding that the tariff now protecting the industry would remain. In the year 1907 West Virginia furnished about one-seventh of the coal output of the United States. At least 60,000 miners are employed in mining this amount of coal. The grade of the coals is very high. No better can be found in the world, and her steam coal is as fine as the finest and is used by the United States battle ships.

The abundance of fuel close at hand makes it possible for the state to engage in all manner of manufactures; the iron and steel industry is an important feature, requiring highly skilled workmen, and it is a notable fact that West Virginia employs a larger number of English-speaking workers than can be found in any other state. One of the steel manufactories dates as far back as 1852. There are located in Wheeling two of the largest independent steel manufacturing establishments in the United States, which

are not controlled by the United States Steel Corporation, one of the manufactories being noted for its cut nails and similar products.

The wool industry is an important one to West Virginia. On a recent trip through the state the writer was struck with the number of sheep grazing on the hillsides and could not help but compare conditions, in this regard, with those that prevailed when Mr. Cleveland was President and the "Wilson Tariff" was in effect. In those days, on the hillsides and meadows there were no sheep. The state offers the emigrant coming into West Virginia great advantages in wool growing. The pastures are as good as the blue grass regions of Kentucky, and the hillsides are particularly adapted to sheep grazing.

For those who are looking for a locality in which to grow fruit, there is no better climate offered in the United States for apple-growing than in Berkeley, Jefferson, Hampshire and Hardy counties, West Virginia. The finest peaches that go to the markets come from Hampshire County and from a part of Hardy.

In the combined values of her several mineral products West Virginia ranks fourth, in the production of coal second, and her rank is first among the states of the Union in the supply of petroleum, gas and hard woods.

Taxable property of all kinds, valued a few years ago at a little over two hundred millions of dollars, is today valued at one billion of dollars. In the past decade more than one hundred new banks have been established and bank deposits have grown from one million five hundred thousand dollars to nine million dollars.

When the state was formed in 1863 there were few, if any, schoolhouses. In 1867 there were seven hundred and two schoolhouses; educational facilities today are six thousand, four hundred and ninety school buildings. The enrollment for the past year was in round numbers, two hundred and sixty thousand, with an average daily attendance of one hundred and seventy thousand. Last year West Virginia spent for educational purposes, four million three hundred thousand dollars.

Over one hundred thousand farms produce great quantities of cereals; the average fertility of the soil being as good as can be found in the Union. Eight hundred and forty-five thousand acres were planted in corn during the last year, twelve thousand four hundred acres in tobacco, and forty thousand acres in potatoes. One county alone sold one hundred thousand dollars worth of tomatoes; and the annual farm products were valued at seventy-five millions of dollars. In another county alone the farm products and fruit sold for over a million dollars. All showing that while West Virginia is hilly its soil is productive.

There is no state debt, and the tax levy is small. Should a tax be levied on the millions of cubic feet of natural gas annually exported from the state there will be no state tax.

This state has the largest axe and zinc factories and pumping station in the world. Water power is going to waste in abundance in every county in the state. Some use is being made of this power in the lower end, but it can almost be had for the asking.

To the tourist West Virginia presents scenery as grand and beautiful as can be found anywhere. The railroads passing through the state appreciate this and have advertised its grandeur far and wide. The great fashionable resort of the south, White Sulphur Springs, lies within her borders, and beautiful and fine summer resorts can be found on its mountain sides and in its valleys The famous Grave Creek Mound, one of the most remarkable memorials of the prehistoric mound builders, has been bought by the state and will be preserved in its present form.

Within its borders was fought the most desperate battle with Indians ever waged on the American Continent, really the first skirmish of the Revolution, and also within its borders the first battle of the great Civil War.

The homeseeker may choose both industry and location in West Virginia. If he desires to go into the coal business, the southern part of the state is open to him. It he wishes to engage in manufacturing where coal and natural gas are almost given for the asking, he should locate in the Ohio Valley, the western portion of the state. If he wants to engage in oil development, there are at least fifteen counties in the state now producing good results from oil wells. The state holds out the "olive branch," and the latchstring is always on the outside of the door to anyone wishing to come to West Virginia, which promises to be one of the greatest commonwealths in this great country of ours.

UNITED STATES NAVAL ACADEMY

Historical Sketch Furnished by the Naval Academy

THE United States Naval Academy, under the name of the the Naval School, was founded in 1845 by Honorable George Bancroft, Secretary of the Navy, under President James K. Polk, and was formally opened October 10th of that year, Commander Franklin Buchanan as superintendent. It was located at Annapolis, Maryland, on land formerly occupied by Fort Severn and relinquished by the War Department to the Navy Department for that purpose.

The course was fixed at five years, of which the first and fifth were spent at school, the second, third and fourth being passed at sea. Several times the exigencies of the service made it necessary to shorten this period of study. In June, 1846, four months after the opening of the school, there were thirty-six midshipmen of the date of 1840 who were preparing for the examination for promotion; thirteen of the class of 1841 who were to remain until drafted for service at sea; and seven active midshipmen appointed after September, 1845. The midshipmen of 1840 were first to graduate, finishing their limited course in July, 1846, and these were followed in order by subsequent classes until the reorganization of the school in 1850. In September, 1849, the following board was appointed to revise the plan and regulations of the Naval School (as these appointees, with one or two exceptions, took a prominent part in the subsequent history of the Navy, and its conflict, something can be said of their biography and service):

Commander William Branford Shubrick, appointed from Maryland in 1806, was attached to the frigate "Constellation" for the defence of Virginia against the British in 1812–13. He served on the Frigate "Constitution" from 1813 to 1815 and took part as third lieutenant in the famous capture of the two British vessels, "Cyane" and "Levant," in 1815. He commanded a Pacific squadron in the Mexican War in 1846 and 1847 and retired as rear-admiral in 1862. He died twelve years later in 1874.

Commander Franklin Buchanan was appointed from Maryland in 1816 and commissioned lieutenant in 1825; made superintendent of the Naval School in 1845 to 1847, in which latter year he commanded the steam frigate "Germantown" at the blockade and bombardment of Vera Cruz, and later he commanded Commodore Perry's flagship "Susquehanna" in the Japan expedition, 1852–1854, and in 1859 was placed in charge of the Washington Navy Yard. In 1861, believing that Maryland would secede, he handed in his resignation, which later he wished to withdraw, but was not permitted to do so. He then entered the Confederate naval service in which he remodeled the steam frigate "Merrimac" into the most powerful ironclad ram that the world had then known, and commanded her in the action of March 8, 1862, in which she destroyed the "Congress" and "Cumberland," sloops of war, but was wounded and unable to command in the next day's fight with the "Monitor." As senior admiral of the Confederate

"The Story of a Great Nation," describing all the departments and bureaus at Washington, began in the NATIONAL for January, 1909, and will continue throughout the year. Thirty-three articles, including the one that appears in this issue, have already been published.

navy, he was sent in 1863 to take charge of the naval defences at Mobile, Alabama, including the ironclad ram "Tennessee," which he commanded and for some time held his own against the Federal fleet under Farragut. Buchanan was severely wounded and made prisoner. In 1866 he was made president of the Maryland Agricultural College and died in 1874.

Commander Samuel F. Du Pont was born in New Jersey in 1803; graduated in 1815 as midshipman; was commissioned lieutenant in 1826; as commander in 1842; as captain in 1852; and as rear-admiral in 1862. He saw service in the Pacific Mexican War at San Diego, La Paz and Guaymas. In 1860 he was placed in command of the Philadelphia Navy Yard and in 1861 sent a force to aid the disembarkation of troops to protect the United States Naval School, and the school ship "Constitution," then threatened with seizure by Confederate sympathizers. In November of the same year with a powerful fleet he reduced the Confederate forces at Port Royal, South Carolina, his vessels passing and repassing through the zone of fire in a figure eight. Later he aided in taking Tybee Island, Georgia, and Fort Pulaski and established fourteen blockading stations on the Southern coast. Later he attempted to reduce Fort McAllister below Savannah, Georgia, and Forts Sumter and Moultrie in Charleston Harbor by the direct fire of a powerful ironclad fleet. Failing in these attempts, he was some months later relieved from active command, having served nearly fifty years. He died about the close of the Civil War in 1865.

Commander George Parker Upshur was born in Virginia, 1799; appointed midshipman, 1818; lieutenant, 1827; commander, 1847; superintendent United States Naval Academy, 1847–1850; commanded sloop-of-war "Levant" Mediterranean squadron, in 1852, and died in command at Spezzia, Italy, November 3, 1882.

Surgeon W. S. W. Ruschenberger served as surgeon from 1831 to 1849; later was stationed at Boston Navy Yard from 1861 to 1865. After his retirement from the service in 1869, he was elected president of the Philadelphia College of Physicians in 1879 and died in 1885.

Professor William Chauvenet of Milford, Pennsylvania, was graduated at Yale in 1840 and was engaged as Professor of Mathematics in 1841. He died in 1870.

Captain Henry Brewerton, United States Army, the fifth member of this board, was born in New York City, graduated at West Point in 1819, and shortly after became assistant professor of engineering at that post. From 1821 to 1861, for forty years, he was engaged on the fortifications and public works of the United States, and in 1861 reached the grade of lieutenant-colonel of engineering. He had charge of the defences of Baltimore from 1861 to 1864; was promoted to colonel and took over charge of the defences of Hampton Roads and New York City in March, 1865; was brevetted brigadier-general, and retired in due course in 1867, having served over forty-five years. He died in Washington, D. C., on April 17, 1879.

This board reported a plan which was approved and went into operation July 1, 1850. It provided for a course of seven years, the first two and the last two at the school and the three intermediate years at sea. The name of the school was changed to "The United States Naval Academy," which it has borne ever since, and it was placed under the supervision of the Bureau of Ordnance and Hydrography. The corps of professors was enlarged, the course extended and a system of separate departments with executive heads fully adopted. It was provided that a Board of Visitors should make an annual inspection of the academy and report its condition to the Secretary of the Navy. A suitable vessel was attached to the academy as a practice ship, and the annual practice cruises were begun.

Another board of examiners, appointed for the year 1851, was composed as follows:

Commodore David Conner of Harrisburg, Pennsylvania, midshipman in 1809; third lieutenant on the "Hornet"; captain "James Lawrence" at the capture of the British frigate "Peacock"; commissioned lieutenant in 1813 and captain in 1835.

Captain Samuel Livingston Breese, born at Utica, New York, 1794, appointed midshipman 1810, took part in the battle of Lake Champlain, 1814; lieutenant, 1816; captain, 1841; commanded frigate "Cumberland," European squadron, 1845; Pacific squadron, Mexican War, 1846–47; at capture of Tuxpan, Tobasco and Vera Cruz, commanded Mediterranean squadron, 1856–

1858; Brooklyn Navy Yard, 1859–1861, retired as commodore, 1862; rear-admiral (retired) 1862, and port admiral at Philadelphia, 1869; died at Mount Airy, Philadelphia, December 17, 1870.

Commander Cornelius Kincheloe Stribling, born in 1796 in South Carolina; appointed midshipman in 1812; superintendent of the Naval Academy, 1850 to 1853; commander at the Philadelphia navy yard, 1863 to 1865; commander-in-chief of East Gulf squadron in 1865; rear-admiral in 1866; died in 1880.

Commander H. A. Bigelow, midshipman, 1812; lieutenant, 1820; commander, 1841; captain, 1854; resigned, 1857.

Commander Franklin Buchanan. Record already given.

Lieutenant Thomas Tingey Craven, born in 1808, appointed midshipman in 1822, lieutenant in 1830. Took part in the Wilkes Antarctic exploring expedition in 1858. Commanded the Naval Academy from 1852 to 1855; commissioned captain in 1861, was placed in charge of the Potomac flotilla. Commanded the steam frigate "Brooklyn" in passing the forts at New Orleans and Vicksburg in 1861 and 1862. Commissioned commander in 1862, commanding the European squadron in 1866, the Pacific squadron in 1868; retired in 1869 and died in 1887.

* * * *

The changes made by this board of examiners went into operation in November, 1851. They left out the requirements of three years of sea service in the middle of the course, thus making the four years of study consecutive. The practice cruise supplied the place of the omitted sea service and gave better opportunities for training. This system with slight modifications has been continued to the present time. The first class to receive its benefits entered in 1851; six members completed the course in three years, graduating in June, 1854; the rest of the class followed in 1855.

In May, 1861, at the outbreak of the Civil War, those members of the three upper classes who remained loyal were detached on active service and sent to sea. For a while it was feared that Maryland would become the battle ground of the contending forces, and there was, undoubtedly, a movement to seize the post and capture the frigate "Constitution," then used as a training ship. The school was removed in 1861 to Newport, Rhode Island, where the junior midshipmen were quartered in the Atlantic House and on the ships "Constitution" and "Santee," and as fast as possible were prepared for active service until the summer of 1865, when the school was re-established at Annapolis.

When the Bureau of Navigation was established July 5, 1862, the academy was placed under its supervision. On March 1, 1867, it was placed under the direct care of the Navy Department, the administrative routine and financial management being still conducted through the Bureau. On the 11th of March, 1869, this official connection with the Bureau ceased, but was renewed by general order of the Navy Department, issued June 25, 1889.

The term of the academic course was changed by law March 3, 1873, from four to six years. The change took effect with the class that entered in the summer of 1874. Up to this time the sailing ship and its evolutions, care and management had naturally formed the main subject of study and basis of official employment and promotion, but the increased use of metals instead of wood and of steam machinery for propulsion and as a substitute for manual labor demanded education of the naval engineers and the employment of officers of mechanical experience and genius. This demand was first partially recognized in 1866, when a class of "acting third assistant engineers" was ordered to the academy for instruction in steam engineering, mechanism, chemistry, mechanics, and practical exercises with the steam engines and in the machine shops. This class with two "cadet engineers," who had entered in 1867, graduated in June, 1868. Four years later in October, 1871, a new class of cadet engineers was admitted which followed a still more extended course and was graduated in 1873. In 1872 and 1873 new classes of cadet engineers were admitted, which, after a two years' course, were graduated in 1874 and 1875 respectively. Congress, on February 24, 1874, extended the course from two to four years, and the class of 1874 graduated in June, 1878.

None of these cadet engineers were considered to rank in importance and standing with the regular "cadet midshipmen" whose traditions dealt with the glorious "hulls of oak," snowy sails, dainty tracery of spar and

rigging, long broadsides, half-open ports and grim muzzle-loading, smooth-bore cannon, which had so suddenly become obsolete and ineffective. The age of steam ironclads and breech-loading rifles of enormous size and power, utterly beyond unassisted human strength and skill to handle, demanded that the navy officers should know how to lead in an emergency of a mechanical and engineering character, and that this ability should be fully recognized and rewarded by rank, pay and social recognition. It was not until August, 1882, that Congress provided that from that date "there shall be no appointments of cadet-midshipmen or cadet-engineers at the Naval Academy, but in lieu thereof naval cadets shall be appointed from each Congressional district and at large, as now provided by law for cadet-midshipmen, and all the undergraduates at the Naval Academy shall hereafter be designated and called 'naval cadets'; and from those who successfully complete the six years' course appointments shall hereafter be made as it is necessary to fill vacancies in the lower grades of the Line and Engineer Corps of the Navy and of the Marine Corps: *And provided further*, That no greater number of appointments into these grades shall be made each year than shall equal the number of vacancies which has occurred in the same grades during the preceding year; such appointments to be made from the graduates of the year, at the conclusion of their six years' course, in the order of merit, as determined by the Academic Board of the Naval Academy, the assignment of the various corps to be made by the Secretary of the Navy upon the recommendation of the Academic Board. But nothing herein contained shall reduce the number of appointments from such graduates below ten in each year, nor deprive of such appointment any graduate who may complete the six years' course during the year eighteen hundred and eighty-two. And if there be a surplus of graduates, those who do not receive such appointment shall be given a certificate of graduation, an honorable discharge, and one year's sea pay, as now provided by law for cadet-midshipmen; and so much of section fifteen hundred and twenty-one of the Revised Statutes as is inconsistent herewith is hereby repealed.

"That any cadet whose position in his class entitled him to be retained in the service may, upon his own application, be honorably discharged at the end of the four years' course at the Naval Academy, with a proper certificate of graduation." In 1886 a special course of instruction in physiology and hygiene was established, in accordance with an act of Congress approved May 20th of that year.

It was further provided March 2, 1889, that "the Academic Board of the Naval Academy shall on or before the thirtieth day of September in each year separate the first class of naval cadets then commencing their fourth year into two divisions, as they may have shown special aptitude for the duties of the respective corps, in the proportion which the aggregate number of vacancies occurring in the preceding fiscal year ending on the thirtieth day of June in the lowest grades of commissioned officers of the Line of the Navy and Marine Corps of the Navy shall bear to the number of vacancies to be supplied from the Academy occurring during the same period in the lowest grade of commissioned officers of the Engineer Corps of the Navy; and the cadets so assigned to the Line and Marine Corps division of the first class shall thereafter pursue a course of study arranged to fit them for service in the line of the Navy, and the cadets so assigned to the Engineer Corps division of the first class shall thereafter pursue a separate course of study arranged to fit them for service in the Engineer Corps of the Navy, and the cadets shall thereafter, and until final graduation at the end of their six years' course, take rank by merit with those in the same division, according to the merit marks; and from the final graduates of the Line and Marine Corps division, at the end of their six years' course, appointments shall be made hereafter as it shall be necessary to fill vacancies in the lowest grades of commissioned officers of the Line of the Navy and Marine Corps; and the vacancies in the lowest grades of the commissioned officers of the Engineer Corps of the Navy shall be filled in like manner by appointments from the final graduates of the Engineer division at the end of their six years' course: *Provided*, That no greater number of appointments into the said lowest grades of commissioned officers shall be made each year than shall equal the number of vacancies which shall have occurred in the same grades during the fiscal year then

current; such appointments to be made from the final graduates of the year, in the order of merit as determined by the Academic Board of the Naval Academy, the assignment to be made by the Secretary of the Navy upon the recommendation of the Academic Board at the conclusion of the fiscal year then current; but nothing contained herein or in the naval appropriation act of August fifth, eighteen hundred and eighty-two, shall reduce the number of appointments of final graduates at the end of their six years' course below twelve in each year to the Line of the Navy, and not less than two shall be appointed annually to the Engineer Corps of the Navy, nor less than one annually to the Marine Corps; and if the number of vacancies in the lowest grades aforesaid, occurring in any year, shall be greater than the number of final graduates of that year, the surplus vacancies shall be filled from the final graduates of following years, as they shall become available.

"That after the fourth day of March, eighteen hundred and eighty-nine, the minimum age of admission of cadets to the academy shall be fifteen years and the maximum age twenty years."

In October, 1897, a post-graduate course in naval architecture, for the education of officers for the Construction Corps of the Navy, was established; and a class was formed from the naval cadets that had finished the four years' course in that year.

By an act of Congress approved March 3, 1899, "the officers constituting the Engineer Corps of the Navy" were "transferred to the Line of the Navy," thereby repealing so much of the act of Congress approved March 2, 1889, as relates to the separation of naval cadets of the first class into Line and Engineer divisions. This same act having limited the number of constructors in the Navy to forty, the post-graduate course in naval architecture was discontinued. By an act of Congress approved June 7, 1900, it was provided that:

"Whenever any naval cadet shall have finished four years of his undergraduate course of six years, the succeeding appointment may be made from his congressional district at large in accordance with the existing law."

By an act of Congress approved July 1, 1902, it was provided that:

"The title 'naval cadet' is hereby changed to 'midshipman.'

"That until the year nineteen hundred and fourteen, in addition to the naval cadets now authorized by law (the title having been changed by this act to midshipmen), the President shall appoint five midshipmen, and there shall be appointed from the states at large, upon the recommendation of senators, two midshipmen for each state."

Congress on April 9, 1906 passed an Act "granting authority to the Secretary of the Navy, in his discretion, to dismiss midshipmen from the United States Naval Academy and regulating the procedure and punishment in trials for hazing at the said academy."

In effect it provides "that it shall be the duty of the Superintendent of the United States Naval Academy, whenever he shall believe the continued presence of any midshipman at the said academy to be contrary to the best interests of the service, to report in writing such fact, with a full statement of the facts upon which are based his reasons for such belief, to the Secretary of the Navy, who, if after due consideration of the said report he shall deem the superintendent's said belief reasonable and well founded, shall cause a copy of the said report to be served upon the said midshipman and require the said midshipman to show cause, in writing, and within such time as the said Secretary shall deem reasonable, why he should not be dismissed from the said academy; and after due consideration of any cause so shown the said Secretary may, in his discretion, but with the written approval of the President, dismiss such midshipman from the said academy. And the truth of any issue of fact so raised, except upon the record of demerit, shall be determined by a board of inquiry convened by the Secretary of the Navy under the rules and regulations for the government of the Navy."

The second and third sections of the act provide for the trial by court-martial of any midshipman for the offence of "hazing" and such court-martial upon conviction may sentence the defendant to any punishment authorized by the acts of 1903 or in case of brutal or cruel hazing may, in addition to dismissal, sentence such midshipman to imprisonment for a period not exceeding one year. It provides, however, that the defendant shall not be confined in a military or

naval prison or elsewhere with men who have been convicted of crimes or misdemeanors; and such finding and sentence shall be subject to review by the convening authority and by the Secretary of the Navy, as in the cases of other court-martials.

The fourth section provides "That the offence of 'hazing,' as mentioned in this act, shall consist of any unauthorized assumption of authority by one midshipman over another midshipman whereby the last-mentioned midshipman shall or may suffer or be exposed to suffer any cruelty, indignity, humiliation, hardship, or oppression, or the deprivation, or abridgement of any right, privilege, or advantage to which he shall be legally entitled."

The fifth section provides "That it shall be the duty of every professor, assistant professor, academic officer, or any cadet officer or cadet petty officer, or instructor, as well as every other officer stationed at the United States Naval Academy, to promptly report to the superintendent thereof any fact which comes to his attention tending to indicate any violation by a midshipman or midshipmen of any of the provisions of this act or any violation of the regulations of the said academy. Any naval officer attached to the academy who shall fail to make such report as provided in this section shall be tried by court-martial for neglect of duty, and if convicted he shall be dismissed from the service. Any civilian instructor attached to the academy who shall fail to make such report as provided in this section shall be dismissed by the superintendent of the academy upon the approval of the Secretary of the Navy."

OBJECT AND SCOPE OF THE NAVAL ACADEMY

The object of the Naval Academy is to educate and train young men for officers in the naval service, and the course for the four years is adapted to that purpose, and the training is intended to fit them mentally, morally and physically to perform all the varied duties of a naval officer with credit to themselves and to the country.

ADMISSION OF CANDIDATES INTO THE NAVAL ACADEMY AS MIDSHIPMEN

The students of the Naval Academy are styled midshipmen. Two midshipmen are allowed for each senator, representative, and delegate in Congress, two for the District of Columbia, and five each year from the United States at large. The appointments from the District of Columbia and five each year at large are made by the President. One midshipman is allowed from Porto Rico, who must be a native of that island. The appointment is made by the President, on the recommendation of the Governor of Porto Rico. After June 30, 1913, each senator, representative, and delegate in Congress will be allowed to appoint but one midshipman instead of two. The course for midshipmen is six years—four years at the Academy, when the succeeding appointment is made, and two years at sea, at the expiration of which time the examination for final graduation takes place. Midshipmen who pass the examination for final graduation are appointed to fill vacancies in the lower grades of the Line of the Navy and of the Marine Corps.

Candidates allowed for congressional districts, for territories, and for the District of Columbia, must be actual residents of the districts or territories, respectively, from which they are nominated. A candidate at the time of his examination for admission to the United States Naval Academy must be between the ages of sixteen and twenty years. He is not eligible until the day he becomes sixteen and becomes ineligible on the day that he becomes twenty years of age.

Candidates nominated for the April examination may be examined in Washington, D. C., if so desired, or at any of the places designated in any state for that purpose. A list of the towns and cities designated for such examination may be secured from the Naval Academy, Annapolis. Senators and representatives are requested, when designating their nominees, to give the place at which it is desired they should be examined for the April examination. The second and last examination is held at Annapolis, Maryland, *only* on the third Tuesday in June under the supervision of the Superintendent of the Naval Academy. Candidates are examined mentally at this examination, and all those entitled to appointment will be directed to report for physical examination, as soon as practicable, at the Naval Academy. Alternates are given the privilege of reporting for mental examination at the same time with the principal. These alternates will take the place of the principal appointees if they fail

in mental or physical examination. No examination will be held later than the third Tuesday in June. The large number of midshipmen to be instructed and drilled makes this rule necessary, and it is to the great advantage of the new midshipmen themselves. The summer months are utilized in preliminary instruction in professional branches and drills, such as handling boats under oars and sails, and in seamanship, gunnery, and infantry drills. These practical exercises form most excellent ground-work as a preparation for the academic course.

The examination papers used in all examinations are prepared at the Naval Academy, and the examinations of candidates are finally passed upon by the Academic Board. Under the law, candidates failing to pass the entrance examination cannot be allowed another examination for admission to the same class unless recommended for re-examination by the Academic Board. The Civil Service Commission only conducts the examination of candidates whose names have been furnished by the Navy Department. All correspondence relative to the nomination and examination of candidates should be addressed to the Bureau of Navigation, Navy Department, Washington, D. C. The candidate is required to enter the Academy immediately after passing the examination and will be examined physically at the Naval Academy by a board composed of three medical officers of the Navy, whose decision will be final. Candidates are required to be physically sound, well formed, and of robust constitution. Any one of the following conditions will be sufficient to cause the rejection of a candidate, namely: feeble constitution, inherited or acquired; retarded development; impaired general health; any disease, deformity, or result of injury that would impair efficiency, such as weak or disordered intellect, unnatural curvature of the spine, inefficiency of either of the extremities or large articulations from any cause, epilepsy or other convulsions, impaired vision, disease of the organs of vision, imperfect color sense, impaired hearing or disease of either ear, chronic nasal catarrh, impediment of speech to such an extent as to impair efficiency in the performance of duty, loss of many teeth, or teeth generally unsound (there shall be at least eight opposing molars, two on each side in each jaw), etc., etc.

Attention will also be paid to the stature of the candidate, and no one manifestly under size for his age will be received at the academy. The height of candidates for admission shall not be less than five feet two inches between the ages of sixteen and eighteen years, and not less than five feet four inches between the ages of eighteen and twenty years; and the minimum weight at sixteen years of age shall be 105 pounds, with an increase of not less than five pounds for each additional year, or fraction of a year over one-half. And *marked* deviation in the height and weight relative to the age of a candidate will add materially to the consideration for rejection.

Candidates must be unmarried, and any midshipman who shall marry, or who shall be found to be married, before his final graduation, shall be dismissed from the service.

Candidates will be examined mentally in punctuation, spelling, arithmetic, geography, English grammar, United States history, algebra through quadratic equations, and plane geometry (five books of "Chauvenet's Geometry" or an equivalent). Deficiency in any one of these subjects may be sufficient to insure the rejection of the candidates.

GENERAL CHARACTER OF THE EXAMINATION

Candidates must be able to read understandingly, and with proper accent and emphasis, and to write legibly, neatly, and rapidly.

In spelling, candidates must be able to write from dictation paragraphs from standard pieces of English literature, both prose and poetry, sufficient in number to test their qualifications in this branch. The spelling throughout the examination will be considered in marking the papers. The Academic Board are instructed not to reject a candidate whose only deficiency is in spelling when the mark therefor is above a certain figure, to be fixed by the board subject to the revision of the department.

The candidate must be familiar with the rules for punctuation and for the use of capitals. In order to test their knowledge sentences will be given for correction.

Candidates must exhibit thorough familiarity with English grammar; they must be able to analyze and parse any sentence given, showing clearly the relations between the different parts of speech, and giving the rules governing those relations. The subject and

predicate in the sentence must be given, with modifiers (if any), and also the part of speech, and kind, case, voice, mood, tense, number, person, degree of comparison, etc., as the case may be, of each word, and its relation to other words in the sentence. He must be able to define the terms used in grammar, a number of which will be given as a test of their knowledge. A composition on one of three subjects will be required. Since the school grammars used in different parts of the country vary among themselves in their treatment of certain words, an answer approved by any grammar of good repute will be accepted.

In geography candidates will be required to pass a satisfactory examination in descriptive geography, particularly of our own country. Questions will be given under the following heads:

The definitions of latitude and longitude (including problems with regard to differences of time between places); the zones; the grand divisions of land and water; the character of coast lines; the climate of different parts of the United States; trade winds; the direction and position of important mountain chains and the locality of the higher peaks; the position and course of the principal rivers, their tributaries, and the bodies of water into which they flow; the position of important seas, bays, gulfs, and arms of the sea; the position of independent states, their boundaries and capital cities; the position and direction of great peninsulas and the situation of important and prominent capes, straits, sounds, channels, and the most important canals; great lakes and inland seas; position and political connection of important islands and colonial possessions; location of cities of historical, political, or commercial importance, attention being especially called to the rivers and bodies of water on which cities are situated; the course of a vessel in making a voyage between well-known ports.

The candidate's knowledge of the geography of the United States cannot be too full or specific on all the points referred to above. Accurate knowledge will also be required on the position of the country with reference to other states, and with reference to latitude and longitude, of the boundaries and relative position of the states and territories, of the name and position of their capitals, and of other important cities and towns.

In United States history the candidate will be questioned concerning the early settlement of the country; the forms of government in the colonies; the causes, leading events, and results of war; and prominent events in the history of our government since its foundation.

Candidates must be familiar with the general history of the world, including the rise and fall of empires and of dynasties; changes in territory as the result of wars or from other causes; the most important treaties of peace; the relations between church and state in different countries; in brief, such information as may be found in the ordinary general histories.

In arithmetic the candidate will be required to express in figures any whole, decimal, or mixed number; to write in words any given number; to perform with facility and accuracy the various operations of addition, subtraction, multiplication, and division of whole numbers, whether abstract or compound, and to use with facility the tables of money, weights and measures in common use, including English money.

To reduce compound numbers from one denomination to another, and to express them as decimals or fractions of a higher or lower denomination; to state the number of cubic inches in a gallon and the relation between the troy and avoirdupois pounds, and to reduce differences of time to differences of longitude and vice versa.

To define prime and composite numbers; to give the tests of divisibility by 3, 5, 9, 11, 25, and 125; to resolve numbers into their prime factors, and to find the least common multiple and the greatest common divisor of large as well as of small numbers.

To be familiar with all the processes of common and decimal fractions; to give clearly the reasons for such processes, and to be able to use the contracted methods of multiplication and division given in the ordinary textbooks on arithmetic.

To define ratio and proportion, and to solve problems in simple and compound proportion.

To solve problems involving the measurement of rectangular surfaces and of solids; to find the square roots and the cube roots of numbers, and to solve simple problems under percentage, interest and discount.

The candidates are required to possess such a thorough understanding of all the fundamental operations of arithmetic as will

enable them to apply the various principles to the solution of any complex problem that can be solved by the methods of arithmetic; in other words, they must possess such a complete knowledge of arithmetic as will enable them to proceed at once to the higher branches of mathematics without further study of arithmetic.

The examination in algebra will include questions and problems upon the fundamental rules, factoring, greatest common divisor, least common multiple, algebraic fractions, equations of the first degree with one or more unknown quantities, simplification of expressions involving surds, and the solution and theory of quadratic equations.

In geometry candidates will be required to give accurate definitions of terms used in plane geometry, to demonstrate any proposition of plane geometry as given in the ordinary text-books, and to solve simple geometrical problems, either by a construction or by an application of algebra.

Candidates that pass the physical and mental examinations will receive appointments as midshipmen, and become students of the Academy. Each midshipman will be required to sign articles by which he binds himself to serve in the United States Navy eight years (including his time of probation at the Naval Academy), unless sooner discharged. The pay of a midshipman is $600 a year, commencing at the date of his admission.

Midshipmen will supply themselves, immediately upon their admission, with the following articles, namely:

One dress jacket	$20.78
One blouse	15.22
One pair dress trousers	11.83
One pair of service trousers	6.68
One overcoat	29.68
One reefer	12.18
Two white blouses	3.50
Two pairs white trousers	3.20
One mackintosh	9.50
One cap cover	.30
Eight work suits	8.00
Two pairs regulation leggings	1.50
One parade cap	3.10
One knit cap	.60
One mug	.08
One soap box	.78
One laundry book	.20
One pair blankets	4.20
One pair overshoes	.70
Two pairs high shoes	8.00
Eight white shirts	4.40
*a*Two stencils, ink and brush	.67
*a*Wash basin and pitcher	.80
*a*One pair gymnasium slippers	.80
*One whisk	.20
*One coarse comb	.13
*One cake soap	.10
*One hairbrush	.55
*Stationery	1.37
*Twelve white handkerchiefs	2.52
*One pair suspenders	.40
Twelve collars	1.50
Eight pair cuffs	1.44
Eight pairs socks	1.60
*Eight towels	1.76
*Shaving outfit	2.43
*Six pairs drawers (summer)	2.40
*Six undershirts (summer)	2.40
One hand glass	.55
One blue jersey	2.20
Four blue jerseys	6.40
Three white hats	1.26
One jackknife	.42
Two lanyards	.24
Six sheets	3.30
Hammock clews	.55
One pair bathing trunks	.15
Three pairs white gloves	.90
Two clothes bags	.54
One hammock mattress	3.00
*a*One requisition book	.25
*a*One pass book	.25
Four suits pajamas	5.60
*One toothbrush	.25
*Thread and needles	.62
*Blacking brush and blacking	.55
*Nailbrush	.30
Six pillowcases	.84
One black silk neckerchief	.45
Name plate	.11
	$191.53

When moving into quarters midshipmen will supply themselves with the following articles, namely:

*a*Two bedspreads	$2.40
*a*Two pairs drill gloves	1.10
*a*One slop jar	.90
*a*Two spatter cloths	1.00
One hair pillow	.75
One mirror	1.00
*a*One rug	.90
*a*One hair mattress	5.10
*a*One broom	.30
	$13.45

Articles marked *a* will not be taken on board the practice ship. The articles marked with a star, not being required to conform to a standard pattern, may be brought by the midshipmen from home, but all other articles must conform to the regulations, and must, therefore, be supplied by the storekeeper.

Each midshipman must, on admission, deposit with the pay officer the sum of sixty dollars, for which he will be credited on the books of that officer, to be expended by direction of the superintendent in the purchase of text-books and other authorized articles besides those enumerated in the preceding article. All deposits for clothing and the entrance deposit of sixty dollars must be made before a candidate can be received at the academy. Checks for these deposits *must not be payable to the order of the superintendent.* They should be made payable to the candidate's own order and be presented to the pay officer of the Naval Academy at the time of deposit.

SUMMARY OF EXPENSES

Deposit for clothing, etc.	$204.98
Deposit for books, etc.	60.00
	$264.98

The value of clothing brought from home is to be deducted from this amount. Each midshipman will be paid, as soon as adjusted by the Treasury Department, the amount of his actual expenses in traveling from his home to the academy.

There being no provision whatever for the payment of the traveling expenses of rejected candidates for admission, no candidate should fail to provide himself in advance with the means of returning home, in case of his rejection before either of the examining boards, as he may otherwise be put to considerable inconvenience.

It is suggested to all candidates for admission to the Naval Academy that, before leaving their places of residence for Annapolis, they should cause themselves to be *thoroughly examined by a competent physician*, particularly regarding eyesight, hearing, and heart trouble; and by a teacher or instructor in good standing. A defect, such as varicocele, which is ordinarily removable by operation, should be remedied prior to appearing at the Naval Academy for physical examination. By such an examination any serious physical disqualification or deficiency in mental preparation would be revealed, and the candidate probably spared the expense and trouble of a useless journey and the mortification of rejection. It should be understood that the informal examination herein recommended is solely for the convenience and benefit of the candidate himself, and can in no manner affect the decision of the examining boards at Annapolis.

A sound body and constitution, suitable preparation, good natural capacity, an aptitude for study, industrious habits, perseverance, an obedient and orderly disposition, and a correct moral deportment, are such essential qualifications that candidates knowingly deficient in any of these respects should not, as many do, subject themselves and their friends to the chances of future mortification and disappointment by accepting appointments at the Naval Academy and entering on a career which they cannot successfully pursue.

The selection of candidates, by competitive examination or otherwise, for nomination from any congressional district, is entirely in the hands of the member of congress entitled to the appointment, and all applications for appointment or inquiries relative to competitive examinations should be addressed to the congressmen representing the congressional district in which the vacancy exists.

TOO MUCH FOR BEECHER

From the book "Heart Throbs."

Henry Ward Beecher was amused when he went into a Bowery restaurant on one occasion and heard the waiter give such orders to the cook as "sinkers and cow," etc.

"Watch me give that waiter an order which I believe he won't abbreviate," remarked Beecher at length, as the waiter approached. Then he said:

"Give me poached eggs on toast for two, with the yolks broken."

But the waiter, equal to the emergency, walked to the end of the room and yelled:

"Adam and Eve on a raft. Wreck 'em."

It is related that Dr. Beecher nearly fainted.

THE TELEPHONE IN NEW ENGLAND

By W. C. JENKINS

NO series of articles on the telephone problem would be complete that did not contain an analysis of the telephone conditions in the New England states. This section is the birthplace of telephony and every important movement in telephone affairs was first given a trial in these states. The work of bringing telephone communication to the high state of perfection which prevails in New England has been accomplished by the New England Telephone and Telegraph Company, one of the largest and best-managed subsidiaries of the American Telephone and Telegraph Company, operating in the four northern New England states.

There is no place on earth that is getting better service than are the New England states. The excellence of the service is one of the prime factors that has kept out competition.

It was one of the hottest days of the year when I visited the main operating rooms of the company in Boston. The comforts and conveniences which have been arranged for the young lady employes were such that I could not but reflect that we, who pay three dollars a day for hotel accommodations, are compelled to get along without any such solicitude for our comfort; and it is evident that these advantageous conditions have attracted the attention of an excellent class of young ladies, for a brighter and more cheerful aggregation of young women who are earning their own livelihood cannot be found in this country. To this high type of young women operators may be attributed the excellent service which the people of Boston are receiving.

The New England Telephone and Telegraph Company has furnished the people of the New England states telephone service for over a quarter of a century, and it is no undeserved credit to state that its history is one of continued success.

In an analysis of the annual report of the company for the year of 1908, the largest single item recorded is for maintenance. It constitutes actually thirty per cent. of the company's entire earning. It is much larger than the company's net revenue, and notwithstanding the fact that the property is in excellent physical condition, the officials spend each year in its conservation a far larger portion of its revenue than the high-class railroads of the country appropriate for maintenance.

Fire on Albany Street, showing poles and wires as a hindrance and source of danger to firemen

The same view after building was rebuilt and also after poles and wires have been removed from overhead

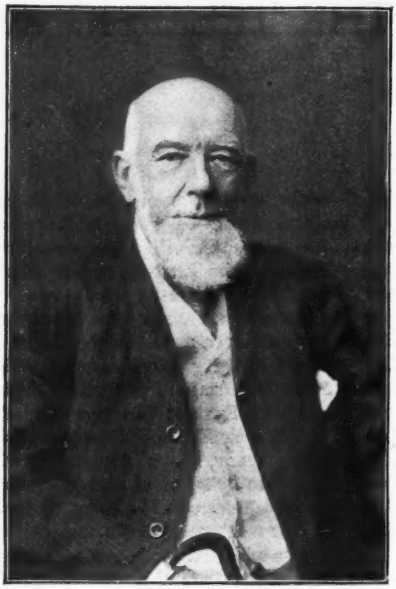
This diversion of income has cut down the dividends to the stockholders, but the original investments have been made more valuable as a consequence, and the policy of heavy appropriations for maintenance and reconstruction has become settled.

The following table of expenditures of the company will be interesting to every investor in telephone securities, and it will be particularly interesting to the managers of independent telephone companies:

	For operating expenses.	For maintenance and reconstruction.	For dividends.
1884	$107,777.48	$102,404.72	.....
1885	116,222.09	173,919.06	.....
1886	142,576.38	186,915.05	$210,000.00
1887	162,642.86	206,541.14	259,413.75
1888	166,555.29	297,405.16	284,651.61
1889	176,381.32	323,246.07	270,726.53
1890	185,117.09	361,932.71	298,265.27
1891	219,242.19	412,607.61	338,630.05
1892	246,400.13	489,994.52	355,726.00
1893	283,723.06	570,868.08	363,811.00
1894	313,864.46	676,119.09	415,784.00
1895	383,174.24	840,731.78	457,362.00
1896	443,987.58	964,203.47	508,180.00
1897	491,571.64	1,091,606.50	569,543.00
1898	576,915.41	1,210,022.71	677,610.00
1899	652,075.64	1,384,258.82	750,216.00
1900	790,500.16	1,588,373.77	838,365.00
1901	978,713.86	1,771,290.48	947,406.00
1902	1,294,571.40	2,045,987.11	1,108,726.50
1903	1,435,773.75	2,156,217.45	1,297,002.00
1904	1,606,711.49	2,547,302.37	1,320,447.00
1905	1,836,423.86	2,778,896.99	1,458,648.00
1906	2,188,010.32	3,045,183.38	1,672,857.00
1907	2,370,525.61	3,346,940.66	1,872,817.50
1908	2,994,303.81	3,396,881.79	2,552,308.50
	$21,453,360.52	$32,068,950.51	$18,845,496.71

NOTE.—Operating expenses, as above stated, do not include general expenses, taxes, rental of telephones, and numerous other items, but only the cost of handling traffic through the central offices.

New England Telephone and Telegraph Company building Worcester, Massachusetts



H. S. HYDE, SPRINGFIELD, MASSACHUSETTS
Vice-President, New England Telephone and Telegraph Company

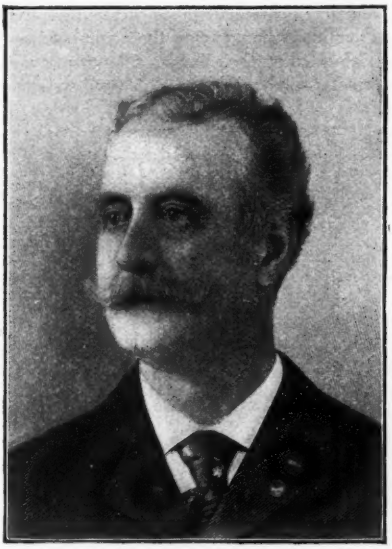
It will be seen by the above report that of nearly $51,000,000 of income above operating expenses over $32,000,000 went right back into the plant to improve the service and to maintain the excellent physical conditions of the property.

The result of this policy has become conspicuously apparent during the past year and it has placed the company's affairs in excellent shape to meet the conditions created by state supervision which is now a feature of Massachusetts public utility laws. The Massachusetts Highway Commission, which was recently given supervision of telephones in Massachusetts, has completed an appraisal of the company's property. Instead of over-capitalization the commission found a reverse condition. With stock, bonds, and notes outstanding at the time when the appraisal was completed of $38,939,850, the expert of the commission found the company possessed $46,540,819 worth of property.

No better tribute to the financial affairs of the company and wise policy of the management could have been found so long as the company requires its stockholders to be content with six per cent. dividends on an

outstanding volume of capital much less than the actual amount of property represented by the stock.

In a letter to His Excellency the Governor, and in the accompanying report of Professor Jackson, recognition is given by the High-



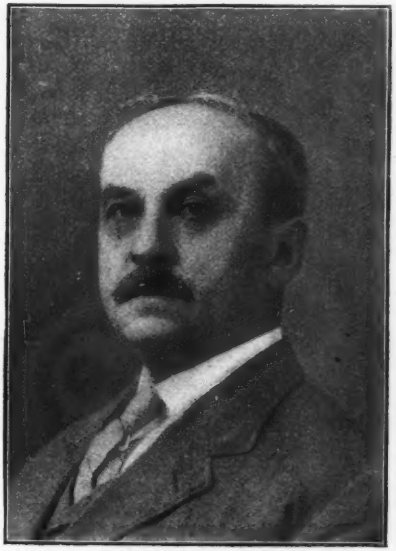
GEN. THOMAS SHERWIN
President, New England Telephone and Telegraph Company

way Commission to the company for its hearty co-operation in the work which the commission has prosecuted. The commission further stated that the results of its work were most satisfactory, that the property of the company is maintained at a high standard of excellence, and that the large and growing business of the company shows that the management have exercised good judgment in the administration of its affairs.

Competition in New England has not been opposition to the Bell interests so much as efforts to supply local demands which the Bell could not properly meet, and this condition gave birth to a number of co-operative organizations and farmers' lines. Among the independent companies in New England may be found a dozen different concerns whose total list of subscribers does not exceed one hundred. Counting all companies that are classed as independent, a total of about one hundred may be found in New England, and the largest number of subscribers which any one of the companies possesses is about eleven hundred.

In the case of the mutual companies the method is to assess the associate members enough to keep their poles and lines in repair. If the companies grow sufficiently, the additional expense of a farmer's daughter to run a switchboard is incurred. One of these New England companies has five subscribers, four have seven each, and the number listed by a large majority of the remainder can be shown with two figures.

Occasionally a movement has become sufficiently interesting in a locality so that it has been considered worth while to incorporate. The stock is generally sold to local citizens who are usually given free telephones, and in only a few instances have the companies grown to any size worth mentioning.



JASPER N. KELLER
Vice-President, New England Telephone and Telegraph Company

In Massachusetts the two principal companies are the Automatic Telephone Company of New Bedford and the Fall River Automatic Company. The former was incorporated in 1898 and the latter in 1899. In some localities the great advantages of

the automatic telephone are proclaimed by independent promoters to be far superior to the manual systems employed by the Bell Companies, but in these two Massachusetts cities the citizens evidently do not recognize any superiority in the automatic instrument, as is evidenced by the fact that in New Bedford the Automatic Company reported 1,240 subscribers in July, 1908, while the Bell Company reported 4,468. In Fall River the Automatic Company had 1,125, while the Bell had 4,423. After a period of several years' trial with the automatic telephone, these facts are very significant and worth remembering by investors.

The Heath Telephone Company, which operated in the western part of the state, became a sub-licensee of the New England Telephone Company in June, 1908. The company had been in existence ten years.

The company acquired during the year 1908 the stock and bonds of three independent companies of Maine, which had been operating for some years, the North Eastern Telephone Company, the Lewiston-Auburn Telephone Company, and the Cumberland Telephone Company. These companies had been unsuccessful from the start, and, as a matter of fact, had proved a detriment rather than an advantage to the communities in which they operated. They were in a weak financial condition, two of their number having defaulted on their bonds. The three companies had an aggregate of 4,500 subscribers.

Corner Main and Pleasant streets, Worcester, Massachusetts, before the wires were placed under ground

The total capitalization of these companies was $850,000 of bonds and $900,000 of capital stock. Of these amounts, the New England Telephone and Telegraph Company purchased $838,000 of bonds and $733,000 of stock, for all of which it paid in cash $403,000.

The outcome of these enterprises furnishes a striking illustration of the fruitlessness and waste of establishing a second telephone system in a field where one company is serving the public efficiently and fairly.

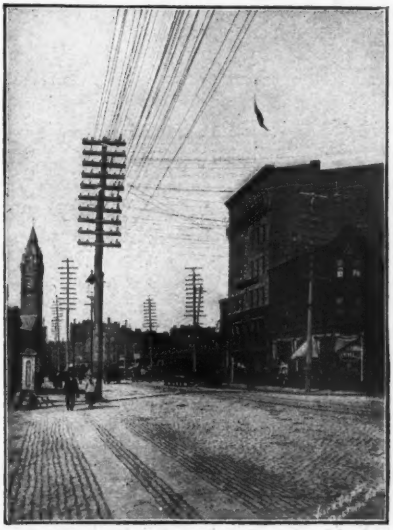
In New Hampshire and Vermont the difficulty of furnishing service equal to the Bell standard served to give impetus to the growth of mutual associations and small corporations. The Bell Company has endeavored to supply the demand by fostering local organizations under sub-licensee contracts with itself. Some of these sub-licensee companies have grown to considerable size and at present there are approximately 47,000 subscribers belonging to the various sub-licensee companies in the four states. All of these companies are on the most pleasant terms with the New England Telephone and Telegraph Company, and their service and policy are directed in an effort to attain the ideal of the larger Bell Companies.

For a time it looked as though Boston would be inflicted with the dual system. In the fall of 1906 upon representation that it was backed by capital, the Home Metropolitan Telephone Company was organized and given recognition. The amount of capital and the capitalists who furnished it were never disclosed. After quite an active newspaper campaign, the company secured permission to operate in the city of Boston from the Board of Aldermen. The mayor vetoed the ordinance and the aldermen passed it over the veto. A bond was filed, conditioned that work should be begun at a certain time, and in the early part of 1909 application was made for permission to open certain streets. This request was refused by the superintendent of streets on the ground that the original general location was invalid. This question was carried to the Supreme Court of Massachusetts and was recently decided adversely to the company on two grounds, namely, that the general location constituted practically a franchise, the gift of which rests alone in the state and also that the proper conditions of notifying abutters had not been complied with.

The Home Metropolitan Company had previously applied for location in Chelsea, but had been refused. Application for location in Cambridge was held up pending the decision of the Supreme Court in the Boston case.

In Brockton certain independent interests received a location on condition of beginning work at a certain time and deposited a five thousand dollar check with the city government as a forfeit in case of failure. Having failed to do any work within the stipulated time the city claimed the check as a forfeit. The depositors of the check have sued to recover the money on the ground that the city was not damaged by their failure to live up to the contract, and the matter is now in the courts.

It would seem to be a most foolish undertaking for anyone to invest money in independent telephone companies in the New England states. The excellence of the service furnished by the New England Telephone and Telegraph Company, and the reasonable rates which are being charged leave



Columbus Avenue north with poles and wires

no opening whatever for independent interests to gain foothold.

The New England Telephone Company has three distinct interests to look out for, namely, the public, its employes, and its stockholders. The aim of the company, in a single sentence, is to make these interests coincident and promoted by the same policy. The company believes that investment in its stock cannot be properly solicited for the needs of new construction unless the investors are properly compensated. It believes that its employes cannot render efficient service unless they work for adequate pay and under wholesome conditions. It believes the public

should pay only such rates as are necessary to secure the conditions above mentioned and at the same time to enable the company to furnish a service of the highest practical

FRANK A. HOUSTON
General Manager, New England Telephone and Telegraph Company

efficiency. The New England Telephone Company is paying as high wages as any telephone company in this country. It has 325,000 telephone stations, including those of the sub-licensee. Between nine thousand and ten thousand persons are employed, of whom more than half are women.

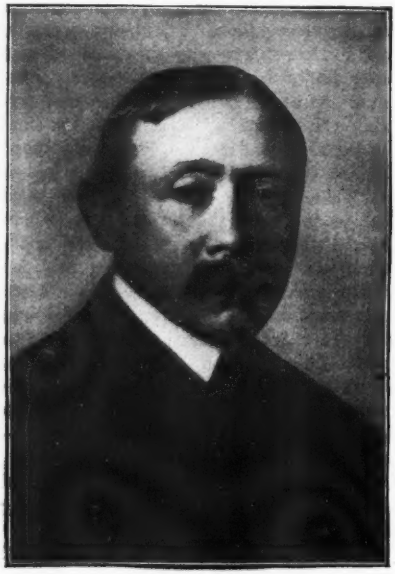
The New England Telephone and Telegraph Company can point to the distinction that Boston stands at the head of four of the largest cities in the United States in the number of telephones per hundred population.

The latest available figures show that Boston has 8.0 per cent.; Chicago 7.6; New York 7.4; Philadelphia 6.5. The following figures illustrate the development of the telephone system in four of the New England states, as compared with the telephone development of other countries.

Name of Country	Population	Number of Telephones	Date of Statistics	Telephones per 100 Population
New England Bell System (Maine, New Hampshire, Vermont, Massachusetts.)	4,255,041	329,352	June 30, 1909	7.7
Sweden	5,337,713	*167,200	Jan. 1, 1909	3.1
Norway	2,321,088	*54,200	Jan. 1, 1909	2.3
Switzerland ...	3,527,256	69,122	Jan. 1, 1909	1.9
German Empire	60,641,278	851,319	Jan. 1, 1909	1.4
Great Britain ..	44,587,106	565,854	Jan. 1, 1909	1.3
France	39,252,267	194,159	Jan. 1, 1909	.5
Belgium.....	7,238,622	38,692	Jan. 1, 1909	.5

*The figures of some of the foreign systems are estimated from the last authentic reports, as statements, in some cases, are not promptly reported.

The above figures certainly speak well for the progressive spirit manifested by the management of the New England Telephone and Telegraph Company, and also for the



E. W. LONGLEY
Auditor and Comptroller, New England Telephone and Telegraph Company

readiness of the people of these states to avail themselves of the most improved facilities for the conduct of business, and of this modern convenience for their homes.

NERVE CENTERS OF A GREAT CITY

By BENNETT CHAPPLE

THE last half century has wrought a greater change in the methods of conducting business than in almost any other department of human effort. Formerly instead of the printed and ingenious advertisement with its quiet but forcible appeal and immense publicity, the indentured apprentice, standing at his employer's door and calling: "What do ye lack, my masters—walk up—walk up! wine! spirits! groceries!" was the only way of making known to the public the special bargains and attractive commodities within. Thus it is today in parts of that ancient Orient, where the merchant still cries sonorously, "In the name of the Prophet! Figs!" and our own street peddlers still echo the street cries that were ancient when London bridge echoed to the hoof beats of the victorious Norman cavalry.

Instead of the speeding automobile and express elevated train, a merchant desiring to meet a man on business formerly ascended the steps of the rumbling coach and was slowly conveyed to his destination, waiting there for the return coach many hours later in the day. If a hasty message was to be dispatched, an apprentice or servant was sent on foot or on horseback, and hours elapsed before an answer was received.

Had a prophet arisen to divine the future and told how a system of speaking wires would be devised that would convey human speech in a few seconds over hundreds of miles of space, he would either have been burned at the stake as a wizard or at the best confined for the term of his natural life in some asylum for the insane.

Today the rumbling coach, the galloping horse, the weary errand boy and clerk on foot, the town crier with his jangling bell are seen no more upon the streets of the city. The tiny lines of wire and the waiting, efficient telephone girl do a thousand times the amount of work they did, and in a fraction of the time formerly consumed. Seventy-five per cent of the business transacted today is done over the telephone. Those magic wires enter every office building in every city in the land, quiet, inert apparently, but having behind them the marvelous modern nerve centers of commerce—the telephone exchange, which supplies the energy for the transaction of all the business of the modern commercial world.

These telephone exchanges are the most interesting places in the world. In a great city like New York, the work is divided among several large exchanges, or central offices, in each one of which are fifty or a hundred girls, trained to the task of answering every call in the shortest possible time. Probably the great success attained by American telephony is due, first to the inventive genius of Americans, and second to their peculiarly alert, nervous temperament, which gives the highest possible rapidity in work requiring alertness and speed rather than muscular strength and endurance.

The switchboard, which is the technical term for this wonderful business nerve centre, is presided over by a force of well-trained operators, and is the visible means by which the human voice is transmitted to all parts of the country. While, to the uninitiated, it looks like a wall shot through at regular intervals with small holes, never were holes bored before that had so much meaning to the human race. Below each one of those tiny apertures connected directly with a subscriber is a light, which flashes the signal to the operator, who with plugs closes the line of transmission between the two parties desiring to communicate. The girls become so expert at their work that the average time required for an operator to receive a call and repeat it to a subscriber is seven and five-tenths seconds. The average time needed for a subscriber to answer is ten and five-tenths seconds. In other words, the average record, from the instant a subscriber takes up the telephone, no matter if he has to be connected with another exchange, until he receives an answer, is ten and five-tenths seconds, which is a marvelous exhibition of speedy communication. It

seems like magic that connection can be made over many miles in less than eleven seconds.

The switchboard, which has made this additional speed in the use of the telephone possible, is comparatively a new invention. It is the result of systematic investigation, experiment and study, spread over a period of more than thirty-one years. The pioneers in the industry, the Western Electric Company, are today the largest manufacturers of telephones and telephone switchboards. They supply all the equipment used in the Bell Telephone system and many important systems in the Old World. The Paris telephone exchange burned out one year ago and was replaced by the Western Electric Company with an efficient system in a time so short that the residents of the Old World sat up and gasped in wonderment.

This company will play an important part in all future development of the world races, notably the Chinese, whose government have authorized them to install a system in Pekin, which will probably do more to open up the Celestial Empire to the world and to progressive methods than any other factor could accomplish—not even excepting railroads.

The important changes in telephone apparatus are so recent that almost everyone can remember the older and comparatively clumsy manner of "calling Central." A subscriber desiring to use the telephone, in order to get "Central," was obliged to turn the crank of a hand generator; there was no other means of securing connection, and after he had finished talking it was necessary again to resort to the crank in order to notify "Central" that the conversation was concluded. With the use of the new switchboard, it is only necessary to remove the receiver from the hook when the upward movement notifies "Central" by means of the little electric lamp which it instantly lights, being but one of many in the lower portion of the switchboard, above the shelf. The attention of the operator being thus attracted, she understands that the party whose telephone is wired to the contacts directly above the lamp desires a connection. There is no noisy buzz to distract the attention of the operator and this system has trebled the efficiency of the service, as well as reduced the strain of the work done by the operators. The operator sits directly in front of the switchboard, at a shelf

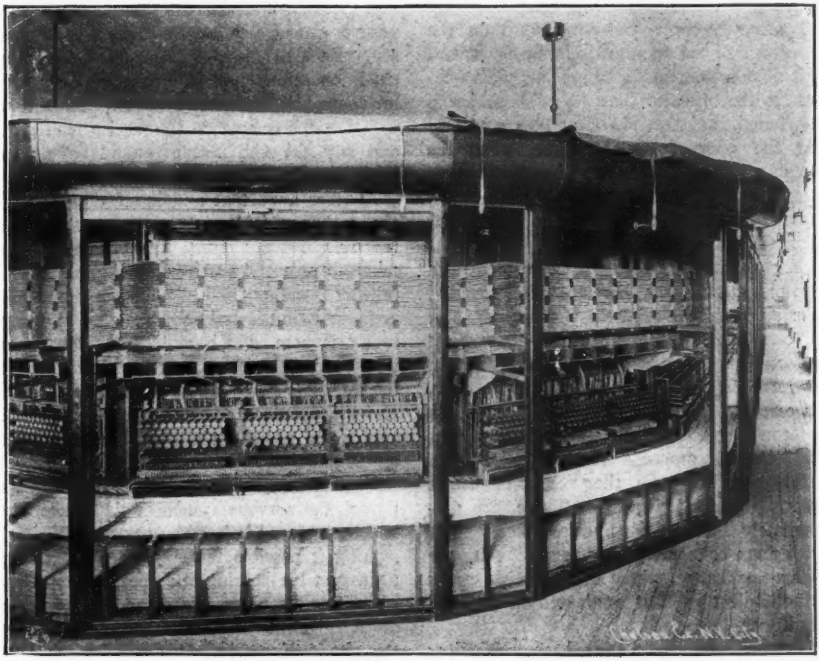
ONE OF THE BUSY TELEPHONE EXCHANGES IN NEW YORK CITY WHERE HUNDREDS OF CALLS ARE ANSWERED EVERY MINUTE

which projects on a level with her waist; from a hole in this shelf she draws a plug terminating in a flexible wire cord and inserts the plug in a small socket above the lamp, which encloses the contacts above mentioned.

This is the answering plug and is wired to a circuit which contains the operator's transmitter and receiver, that enable her to converse with the calling subscriber; she learns what connection is desired, inserts the plug

upper part of the board, are thousands of jacks, one for the line of every subscriber connected with the exchange; these are called "multiple jacks" because they are duplicated once throughout every section of the board; each "section" is occupied by three operators.

One of the subscriber multiple jacks is used by the operator receiving a call if the party asked for has telephone connection with



BEHIND THE SCENES OF A NEW YORK CITY TELEPHONE EXCHANGE, SHOWING ITS INTRICATE MECHANISM AND THOUSANDS OF WIRES

connected to the other end of the flexible cord into the desired party's "jack" and rings his bell. Then the light goes out. The sockets connected directly with subscriber's telephones are called "subscriber answering jacks." Below each socket is its corresponding lamp. The transmitter is held in position by a strap around the operator's neck, which keeps it always a few inches from her mouth; the receiver is clasped to her ear, and both are of an ingenious and portable type that never interfere with her movements.

Within reach of the operator, on the

the same exchange; she uses it by inserting the plug connected to the calling extremity of her transmitter and receiver circuit into the socket of "the multiple jack" which is wired to the telephone of the desired party. Pressing a switch on the shelf she sends out an electric current that rings the telephone bell of the desired subscriber, meantime pressing a key which disconnects her telephone set from this circuit.

To conclude her duties regarding a call that has reached this stage, the operator relies rather on her eyes than her ears. As soon

as the called subscriber removes his receiver to answer, the small electric lamp on the shelf, which was automatically lighted when the plug was inserted in that party's "jack," becomes dark. This lamp is called "a supervisory signal" and notifies the operator that the connection is completed.

While the subscribers converse, the lamps on the switchboard remain dark; when the called party has finished talking and hangs up his receiver, his "supervisory lamp" lights. As soon as the other party hangs up his receiv , the supervisory lamp on the other side of the operator's circuit lights, and this dual system of lights are automatic signals to the operator that the conversation is concluded, and that she is at liberty to pull out the plugs from the jacks, when the weights attached to the connecting cords automatically draw them below the shelf, leaving only the plugs visible above the surface.

Each connecting cord circuit terminates in two plugs, and when there are seventeen cord circuits in each operator's position, one girl at one time can connect thirty-four local subscribers, although it is unusual for an operator to have so many calls at once. In case the calling party asks to speak with someone connected to another exchange, the operator proceeds very much as in a local call, but uses the "outgoing trunk multiple jacks" instead. These are immediately below the "multiple jacks," and with them connection may be made with the desired exchange, where the incoming call is handled just as if it originated in its local territory.

Persons who have visited central offices years ago when the old buzzing system of calls was in force, will be struck by the absence of noise in the operating room under the present system. The click of keys and plugs, the sound of low voices, make a subdued, busy hum rather agreeable to the ear. The little constellation of lamps flash their messages over the switchboard, and the familiar "number, please," the slogan of modern commerce, is heard as the signals are swiftly answered.

Behind the long row of operators walk the supervisors—the promoted operators—each in charge of a certain number of "hello girls." Their duty is to see that work is equalized, and when an unusual rush occurs, the supervisor is expected to handle difficult calls herself. Each of these officials, as well as the chief operator, has a "listening-in" key for connecting with any operator, and in this way a watch is kept on the service rendered, and any girl who fails to attend strictly to business is liable to "hear of it."

Another important and interesting part of the exchange is the terminal room, where the outside wires enter; here every care is taken to protect from runaway lightning and railway currents, and the devices employed are a study in themselves. The "distributing rack" is here, which divides the telephone wires among the switchboard sections, so that the calls may be equalized. In this room are also the dynamos and storage battery which supply the necessary electrical current both for talking and signalling.

Visiting one of the exchanges one feels as though the nervous system of the whole city had been placed before him under the X-rays, making it possible for even a casual visitor to inspect the hearing and speaking muscles, as well as the nerve system and entire brain of a gigantic modern metropolis. Only thought itself can be more rapid in its connection with distant scenes and considerations, than this perfected telephonic communication between parties in its use with expert trained operators.

CHARITY

From the book "Heart Throbs."

There is so much that is bad in the best of us
And so much that is good in the worst of us
That it doesn't behoove any of us
To talk about the rest of us.

AMERICA'S GARDEN OF EDEN

By FRANK P. FOGG

UPON beautiful table-lands of the Ozarks is Rogers, the most thriving city among the great fruit orchards of Benton County, Arkansas. Rogers, made up of a cosmopolitan population, has citizens from almost every state in the Union, but has drawn the line by having no colored people. They evidently have solved the negro problem most satisfactorily to themselves by refusing to have any problem at all.

For a long time a sign was significantly posted at the station:

"Nigger, don't let the sun go down on you here."

Sometimes an incautious colored gentleman steps off the train, but when some one sounds the slogan—"Get a rope for that nigger," it provokes a general smile to see the rapid retreat into the train, or sometimes a precipitate flight down the railroad track. But it is doubtful if any bodily harm would be visited upon the colored men, as it affords more fun to see them work their pedal extremities.

It is claimed by scientists that the Ozark Mountains are the oldest parts of the North American continent. Be that as it may, it seems to have soil especially adapted for fruit-raising, and it is said more seedling apples have been propagated hereabouts than any other section of the country.

All through this section there is just enough change in the seasons to make each one attractive. "All sunshine makes the desert," and the alert settler knows that variety of climate means variety of crops; nothing is more profitable to agriculturists than diversified farming.

GARFIELD, NEAR ROGERS, ARKANSAS, IS A BEAUTY SPOT IN THE OZARKS

Here over many an acre Pomona reigns supreme; all kinds of fruit trees ablaze with blossoms, or branches weighted with fruit so that they must be propped to avoid injury, attest her care of this fertile area.

Benton and Washington counties have long been considered America's greatest apple orchard; they have a larger apple-bearing acreage than any other counties in the United States, and nearly 400,000 barrels of apples were shipped from these counties last year. The fruit is contracted for while on the trees, in August, at a price ranging from $75 to $100 per acre, and the value of the apple and peach crops of the district this year has been conservatively estimated at $2,000,000.

In looking over the adjacent farming lands one is struck by the excellent soil, the ample supply of pure water, and the thrifty appearance of the orchards. Besides shipping vast quantities of apples and peaches, Rogers has a way of working up the unmerchantable apples into vinegar. Here is one of the largest vinegar plants west of New York, and there is always a good demand for pure cider vinegar. With good railroad facilities north and south, and west into Oklahoma, manufacturers will not long neglect so good a location for locating their new industries.

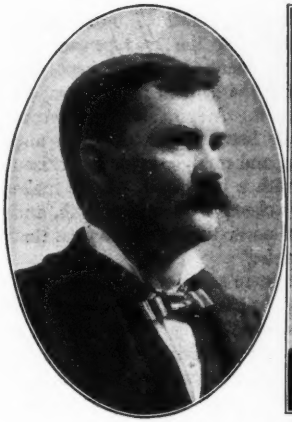
Poultry-raising has attained a magnitude that commands passing tribute, for carloads of eggs and dressed poultry are almost daily shipped from Rogers to Northern and Eastern markets. The mild winter permits outdoor poultry-keeping the year round, and the ease with which grains and vegetables can be raised on a little farm makes the item of chicken feed a great saving as against other places where grain and patent poultry food must necessarily be bought.

Bee-keeping is also profitable, and it was remarkable to hear the success of those who are already engaged in this business.

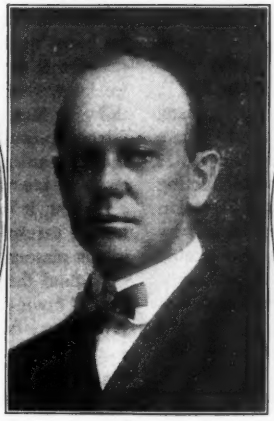
A traveler who has seen many sections of the country, including Canada, remarked that there are comparatively few places possessing the thrifty, wholesome conditions for farmers and tradesmen that are met with in Rogers.

One can always judge the prosperity of a town by noting the business done by the banks. Rogers has three strong banking institutions, and the building activities give the town a bustling appearance. The moral status of the town is also notable, for there are no saloons, no billiard halls and no gambling rooms.

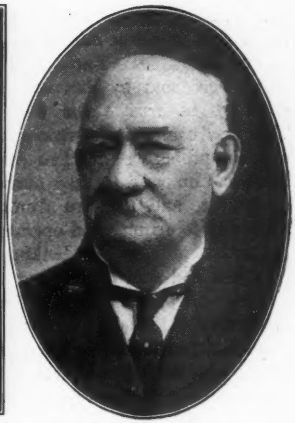
THE PLACID BEAUTY OF WHITE RIVER, NEAR ROGERS, ARKANSAS



H. B. RICE
Mayor of the City of Houston, Texas



C. H. DUNBAR
Secretary and General Manager Houston Gas Company



W. H. CHAPMAN
General Manager, Houston Lighting & Power Company

PROBLEMS in MUNICIPAL ECONOMICS

By WILLIAM S. JENSON

THE first street railway was built in San Antonio in 1898 by August Belknap and others when the city had about 15,000 people. The first line was built from Alamo Plaza to San Pedro Park. Then the Government Hill line was built, and later lines were constructed from Alamo Plaza to the old Mission Gardens, and to the Southern Pacific and I. & G. N. depots. These lines were operated by mules until 1890, when the system was electrified. The company was known as the San Antonio Street Railway Company.

Another company built a line from Government Hill through the business portion of the city to Riverside Park, which connected the military post with that resort. This company was known as the Citizens' Electric Power & Street Railway Company. The company never built a plant; its power was purchased from the San Antonio Street Railway Company.

In 1898 the Citizens' Company was absorbed by the San Antonio Street Railway Company.

In 1899 Emerson McMillin and associates purchased the stock of all the San Antonio railway and lighting companies. Previous to this purchase the franchises of the companies had been extended, and the possibility for successful results seemed very hopeful. The ink on the paper representing the transfer, however, was scarcely dry before quo warranto proceedings were begun by the state against Mr. McMillin and associates, seeking to obtain a forfeiture of the companies' charters on account of an alleged violation of the Texas anti-trust law. This proceeding on the part of the state was a great surprise to Mr. McMillin, whose intention was to operate the properties under similar corporation methods that had previously existed. The suit resulted in the different companies being thrown into the hands of receivers. E. R. Norton was appointed receiver for the San Antonio Edison Company, William G. Schuwirth for the Mutual Electric Light Company, Thomas Johnson for the San Antonio Railway Company, and B. M. Harmmond for the San Antonio Gas Company.

The receivers operated the properties for a few months with no change in the management. E. H. Jenkins, who had previously

been in charge of the properties, retained his position as president and general manager of all the companies. Early in 1900 the properties were sold by the receivers to M. F. Douthirt as trustee for the bondholders. Two new companies were organized to take over the properties—the San Antonio Gas & Electric Company to take over the lighting companies, and the San Antonio Traction Company to acquire and operate the railway properties. Mr. E. H. Jenkins was elected president and general manager of both companies. Mr. Jenkins died in 1902, and was succeeded by Reagan Houston until January 1, 1905, when the latter resigned and H. M. Littell was elected to fill the vacancy. Mr. Littell was in charge of the properties until August, 1906, when he was succeeded by W. B. Tuttle, who has since been in charge.

The San Antonio street railway men get higher wages than are paid in most cities of its size in the country; they are provided with a club-room where magazines, books and pool-tables are available, and they are furnished a substitute without loss of time while they are eating their noonday meal. Every employe interviewed declared that he was well satisfied with the treatment he was receiving; and a brighter and more loyal class of street railway men cannot be found in the country.

The company has spent an enormous amount of money during the past nine years in bettering the system. Between 1900 and 1902 twelve miles of track were rebuilt with concrete foundation; since 1904 the remainder of the trackage has been rebuilt. The power house, car barns and rolling stock are kept in excellent condition. While some of the cars are not of recent design, they are kept neat and clean, and altogether the physical condition of the property presents a very healthy appearance.

I have stated that the commission form of government is in effect in most of the large Texas cities. San Antonio, however, is an exception, and as far as the public utilities are concerned there is no necessity for a change from existing conditions. Mayor Callahan is a firm believer in the theory that the corporations have rights that must be respected. He encourages them to develop and extend, but does not permit any unwarranted privilege. In speaking about the railway and lighting properties, Mayor Callahan said: "We have in San Antonio the [illegible]-managed companies in the South. I admire the business methods of the management. A promise is never made that is not kept, and we know that if the general manager says a thing he means it. A spirit of absolute confidence prevails between our aldermen and the companies, and rarely ever does a citizen come to me with a complaint. If we make a request, it is cheerfully complied with, and we are careful never to make a request that is not reasonable."

I found the same spirit of admiration and respect among the bankers and business men. It is a confidence that is a very valuable asset. Such a spirit of fairness that is manifested by the city government permits the companies to feel certain that they can invest additional capital without any fear of embarrassment by hostile political interests.

The original gas company was organized March 6, 1860. The first price of gas was fixed at seven dollars. This price was reduced from time to time until 1890, when two dollars was charged. On March 16, 1899, the council granted an extension of the franchise with an agreed price of two dollars for illuminating gas and $1.50 for fuel gas with twenty-five cents reduction for prompt payment. Later a voluntary reduction was made in the price of illuminating gas, and both fuel and illuminating gas are now $1.25 net. The franchise has been extended to 1940; in fact, all the franchises—railway, electric light and gas—expire in that year.

The gas plant has eighty miles of mains, and four thousand meters are in service.

During the past few years the company has built an entirely new plant in a different location, covering a block of ground, and on the tracks of two railway systems. The holder capacity is 550,000 cubic feet.

The electric lighting plant was built in the late eighties, and in 1890 the property was purchased by the San Antonio Gas Company. During the last two years the company has installed two steam turbines of 1,500 kilowatt capacity. They are just beginning the construction of a new additional plant with increased capacity and located on the river and railroad tracks. The lighting rates average nine cents per kilowatt, and the power rates are six cents, with ten per cent. discount for prompt payment. The city pays seventy-two dollars per year for arc lighting, and about 400 street arcs are in service.

There are no better managed public utilities in Texas than the railway, gas, and electric lighting companies of San Antonio, nor are any cities getting better service.

* * * *

San Antonio has not followed the footsteps of other Texas municipalities in the matter of municipal ownership of its water-works system, and this is principally because the plant, which is owned by a private company, is more than adequate to meet the demands of the citizens, while the contract and rates are eminently fair and satisfactory; in fact, there is no city in the Southern states, with the possible exception of New Orleans, whose water-works system has a greater pumping capacity, or which is furnishing a quality of water equal to that being served the people of San Antonio by the water company of that city. There would be no advantage to the people of San Antonio in the application of municipal ownership of its water works, and there is no agitation along these lines.

The original water company in San Antonio was organized in 1877 and reorganized in 1880. The present owners acquired the property in 1905, and the name was changed to the San Antonio Water Supply Company.

The original plant was designed to furnish water from the springs at the head of the San Antonio River. About twenty years ago the springs began to diminish in their flow, and the company was compelled to seek a better supply. An effort was made to sink an artesian well about two miles north of the city. After sinking about 1,800 feet the project was abandoned. The company then began boring at a point where the present works are located and succeeded in obtaining an abundant supply. Four additional wells were sunk at pumping station number two, and another well was driven at station number one.

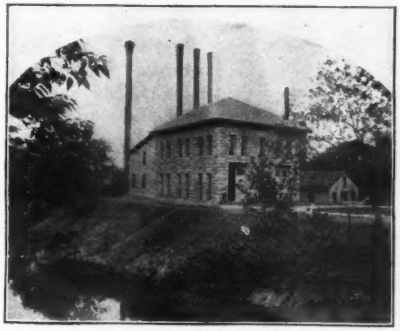
In 1895 the water power was abandoned, and a steam plant was built. Electric power, which had also been utilized, was discarded with the introduction of steam.

In 1903 the company installed an Allis Chalmers vertical, high duty, triple expansion pumping engine of 15,000,000 gallons daily capacity; in 1908 an additional engine of the same type with 20,000,000 gallons daily capacity was added. The total pumping capacity of the plant is now about 50,000,000 gallons per day.

The available water supply at the present time is about 80,000,000 gallons per day, or enough to supply a city more than double the size of San Antonio. The greatest demand that has ever been made upon the plant was 18,000,000 gallons per day. In addition the company maintains a reserve reservoir with 5,000,000 gallons capacity.

San Antonio is probably the only city of importance in Texas that has not found it necessary to restrict the citizens in the use of water during fires.

The company is operating under a fifty-year franchise with a ten-year extension privilege. This franchise was granted in 1880.



WATER WORKS PLANT
San Antonio Water Supply Company

Contracts are made with the city for ten-year periods, and the present contract will expire in 1912. It provides that the city shall pay $2,000 a month for water used for public purposes. This includes flushing the city's sewers, street sprinkling and washing streets, public buildings and parks, and the water furnished to 1,300 hydrants. It also provides that the company shall flush one closet in each residence free of charge. The company pays the city in taxes each year about $6,000 more than it receives for water service to the municipality.

The rates to private consumers are fixed by the city, and the right is reserved to change them from time to time, but no existing contract can be abrogated. The meter rates are cheaper than in any city in the Southwest. A charge of fifteen cents per 1,000 gallons is made to residences, with a minimum charge of one dollar. Above this amount the price

is fourteen cents. The commercial rates are based upon a sliding scale with a maximum charge of twenty-five cents per 1,000 gallons, until the bill reaches one dollar, then reduced as low as nine cents when the consumption is large.

The flat rates are lower than in nearly all the cities of the state, especially when it is considered that one closet in each residence is flushed free of charge.

The contract calls for the laying of 15,000 feet of pipe each year, but the company has exceeded this amount by nearly 10,000 feet annually. The system has 140 miles of large mains, ranging from five to thirty inches in diameter, besides about seventy miles of smaller pipes.

The water has been analyzed on several recent occasions and pronounced free from organic matter and practically absolutely pure. Mr. C. H. Surkamp, vice-president and general manager, who has been in charge of the property for the past three years, has succeeded in establishing a degree of confidence in the company that permits the business to run along without any unnecessary friction. Mr. H. E. Ellsworth, secretary and treasurer, who has been with the company since 1890, is most efficient and fully understands the requirements of the citizens.

There is nothing but the kindliest feelings on the part of the people in general toward the company, and this condition is the result of the liberal and progressive spirit manifested by the company.

* * * *

If one wants to study the effects of good government upon a municipality, Houston, Texas, affords the opportunity; and it is interesting to note the remarkable strides in commercial advancement the city has made since its government was rescued from official incompetence and extravagance and placed upon a solid business basis. Houston is the best-governed city in the United States, and Mayor H. B. Rice is one of the best official heads of any municipal government in this country. This statement is made after a careful study of municipal conditions in nearly all the important cities of this country, and I do not hesitate to recommend that the expense of a trip to Houston by a committee of aldermen from any city in the United States would be money well invested. If the visiting committee would study the history of municipal government in Houston, it would find a period of rottenness that was appalling. It would find a city advantageously located for commercial advancement, but which, under non-progressive but grafting administrations, made no material gains. It would see the people struggling under a system that was nothing but political bickerings and squandered taxes. Debt after debt was being created and nothing to show for the moneys paid into the treasury. It was a veritable Sodom and Gomorrah.

When patriotic but disgusted citizens proposed a house cleaning and the establishment of a new system, the old beneficiaries of the political conditions held up their hands in holy horror at what they termed the evils of a one-man government. But reform was in the air, and it swept Houston like a tornado, and in the place of abandoned profligacy in municipal affairs, a few honest energetic men were delegated to carry out a plan that would bring order out of chaos.

When Mayor Rice and four commissioners were chosen to administer the affairs of the city under the commission plan of government, in 1905, they found a floating indebtedness of over $400,000 and an empty treasury. The city virtually had no credit. There was not a single merchant who desired to transact business with the local government. The prospect was indeed gloomy, but the commissioners went about their task with a determination to better conditions. Useless and expensive offices were abolished, while others were consolidated. A national bank was made treasurer of the city, allowing a salary of only fifty dollars per month for clerk hire, and the bank to pay interest on all balances to the credit of the city. The city attorney was instructed to institute and file suits for all delinquent taxes, and this procedure caused to flow into the treasury nearly $100,000 in eight months from this source alone.

By the strictest economy over $300,000 of the floating indebtedness was reduced during the first eight months, besides paying the monthly bills promptly. In three years of commission rule, the city of Houston wiped out its floating indebtedness of over $400,000, and gave the taxpayers out of the treasury, without the issuance of a single bond, $701,026.74 of permanent improvements, and for

the first time in the history of Houston a sinking fund has been created. While these improvements have been going on, the tax rate has been reduced thirty cents on the hundred dollars.

Under the present government in Houston there is no favoritism shown the saloon interests, and as a consequence the liquor business is being conducted with as little offense as possible. The brewers co-operate with the authorities in ridding the community of undesirable characters who get into the saloon business, and there is an absence of that rowdyism and debauchery which characterize the saloons of many American cities.

Mayor Rice is no servant of the public-utility men of Houston, neither does he aspire to be their master. He believes they should be encouraged in making investments that will improve their properties and be of benefit to the city. He believes that legalized capital under the laws of Texas thus invested is entitled to protection, and should earn a just interest in their authorized capital; and he boldly asserts that as long as he is mayor no bond owner in any Houston corporation need fear the enactment of any unreasonable or impracticable measures affecting their interests.

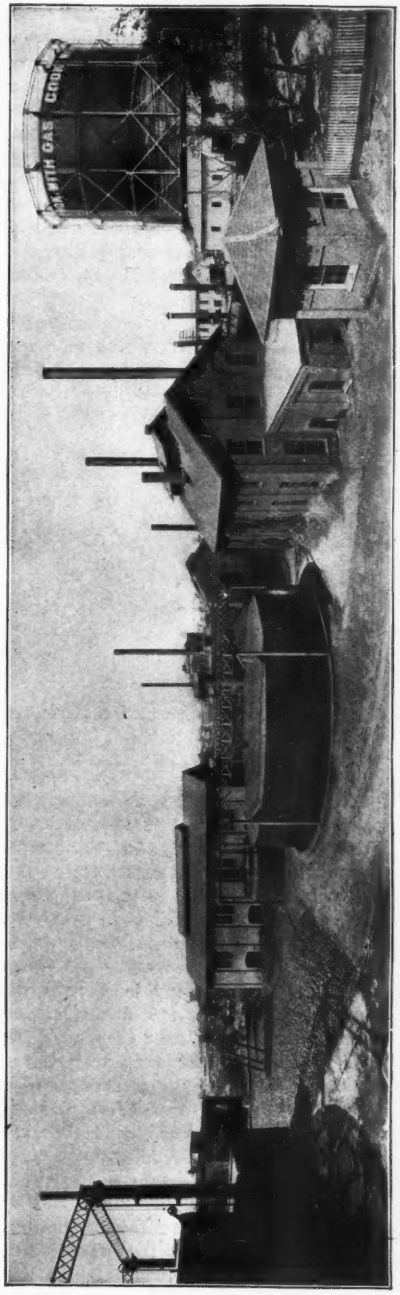
In speaking of the Houston public utilities, Mayor Rice said: "We are proud of our public-utility companies. Our street railroad properties are under the control of practical public-utility men, and the management is most efficient. The lines are being extended as fast as there is demand, and the property is kept in good physical condition.

"We have one of the best electric lighting companies in Texas. The company under its present management has never been in conflict with the city, and the service furnished admits of no complaint. I regard the company as thoroughly up to date and the management very competent.

"Our gas company is giving entire satisfaction. Its rates are lower than those charged in any of the Texas cities, while the quality of the product is the very best. Extensions are made as fast as required, and the management enjoys the full confidence of the people."

* * * *

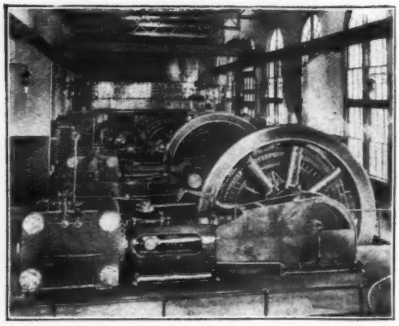
Houston's gas history would be interesting reading to present-day users of the commodity, and in view of the manifest prejudice



PLANT OF THE HOUSTON GAS COMPANY, HOUSTON, TEXAS

on the part of many people against all public-utility companies, no better method of combatting this sentiment could be adopted than to furnish the plain facts regarding advantages given today that our forefathers did not enjoy.

In the presentation of the history of gas lighting in Houston, the student would find a period during which the citizens were paying ten dollars per thousand cubic feet for gas, and that of an inferior quality, while today the price charged is $1.15, and the quality is the very best. In the early days the methods employed were naturally of a primitive nature, and every new innovation was an experiment. Notwithstanding the



INTERIOR OF THE HOUSTON LIGHTING & POWER COMPANY'S PLANT

seemingly exorbitant price, the company was unable to obtain a fair return on the money invested, but the property was owned largely by patriotic citizens who wanted to give their city as metropolitan an aspect as possible and therefore were willing to lend their credit to the institution so that improvements and extensions might be made.

The first gas ompany in Houston was chartered in October, 1866, under the name of the Houston Gas Light Company. The plant was built the following year and gas supplied in 1868, the price being fixed at ten dollars per thousand cubic feet. Pennsylvania bituminous coal was used for the manufacture of gas and was retailed to the people of Houston at that time for twenty dollars a ton. Various interesting resolutions appear on the record books of the company, and several may be found to the effect that the superintendent be instructed to put the works in tidy condition. Evidently the superintendent ignored this resolution, for it appears later that the directors had the renovating resolution carried into effect, and the expense was charged up to the superintendent and deducted from his salary. It is needless to state that he was not a permanent fixture with the company.

Under various managers the Houston Gas Light Company continued in business under that title until March 1, 1905, when it was reorganized under the name of the Houston Gas Company, and is being operated now under that name. The present capitalization of the company is $650,000. There have been issued $684,000 first mortgage and $120,000 second mortgage bonds. The property is in excellent physical condition, and the gas pressure is most uniform.

The price charged for gas during the life of the company was as follows: 1868 to 1870, ten dollars; 1870 to 1873, seven dollars; 1873 to 1876, five dollars; 1876 to 1889, four dollars; 1889 to 1890, $2.50; 1890 to 1898, two dollars. In the latter year a new franchise was granted the Houston Gas Light Company for a period of thirty years, and the price of gas fixed at $1.80 a thousand cubic feet. The reductions in price had all been voluntary on the part of the company.

On January 1, 1906, the price, by agreement with the city commission, was again reduced to $1.25 net, and this was again reduced on July 1, 1908, to $1.15 net. This is the present price and is the lowest of any of the cities of Texas.

The company now has 100 miles of gas mains and over 6,500 customers. The present capacity of the plant is 1,500,000 cubic feet per day. Contracts have been let to double the capacity during the present year.

The Houston Gas Company has succeeded in gaining the confidence of the people of Houston, and its relationship with the municipality is most harmonious. Its management believes that no better asset can be obtained than the goodwill of its patrons. It endeavors to be liberal in its treatment of the public, willing to make all necessary extensions as fast as required, and ready at all times to rectify errors the moment they are brought to the company's notice. The management is among the foremost boosters of Houston, and is ready at all times to aid in any municipal advancement.

C. H. Dunbar, secretary and general

manager of the company, has been in charge of the property for the past five years. He was formerly in charge of important gas properties in the North and is one of the most thoroughly posted men in gas manufacture and distribution in the South. The Houston Gas Company is in excellent condition, and the property is very valuable.

* * * *

Electric lighting began in Houston in 1882. On June 5th of that year an ordinance was passed by the city council granting certain rights and privileges to the Houston Electric Light & Power Company. On February 13, 1888, an ordinance was passed granting the Fort Wayne "Jenney" Electric Light Company the privilege to erect poles, etc. Both of these companies passed into the hands of the Citizens' Electric Light & Power Company, who acquired the franchise and physical property. In 1898 the latter company went into the hands of a receiver on account of default in payment of interest on its bonds.

On November 12, 1901, a charter was granted to the Houston Light & Power Company. This company was acquired by the present company, and a charter was granted January 8, 1906, since which time the present owners have been in control.

As an illustration of the greatly increased cost to the users of electricity over present prices, it might be stated that in 1898 the rates for commercial service were: all night, every night, arc lamp, $17.50 per month; ten o'clock arc lamps, six nights per week, eight dollars per month; ten o'clock service, one dollar per month. The current was furnished only from dark till dawn. Power rate was five dollars per H. P. per month. The present prices are single rate, twelve cents per kilowatt hour, with a minimum charge for service of one dollar. All charges under this rate, if paid before the tenth of the month, are subject to the following discounts: bills over one dollar and up to $4.99, five per cent.; over five dollars and up to $24.99, ten per cent.; over twenty-five dollars and up to $49.99, fifteen per cent.; over fifty dollars and up to $74.99, twenty per cent.; over seventy-five dollars and up to $99.99, twenty-five per cent.; all bills over one hundred dollars, thirty per cent. discount. Street arcs, seventy dollars per year.

Two rate, thirteen cents per kilowatt hour for the first two kilowatt hours consumed per month per sixteen candle power incandescent lamp wired, or its equivalent, and seven cents for all in excess of that amount. The minimum bill to be one dollar, and five per cent. discount is allowed for prompt payment.

The power rates are, for a monthly consumption of 1,000 kilowatt hours or less, six cents per kilowatt hour. All in excess of this amount, five cents, subject to a discount of five per cent. for prompt payment.

Special prices are made on fan service, according to the number used and length of time in operation.

In 1898 the old power house was destroyed by explosion and fire. The capacity of the old power house was 562½ kilowatts. In 1898 the connected load was: 191 street arcs, 173 commercial arcs, 2,200 equivalent sixteen candle power lamps, 228 H. P. motors; total equivalent sixteen candle power, 9000. In 1909 the connected load has increased to 625 street arcs, 2,112 commercial arcs, 13,179 equivalent sixteen candle power lamps, 7811 H. P. motors, and total equivalent sixteen candle power, 212,373. The company has 5,225 meters in service.

The capital stock is $1,000,000 with a bonded indebtedness of $744,000.

Perhaps few lighting companies in the United States have had a more peaceful career than the Houston Light & Power Company has experienced since the present management has been in control. This was not due, however, to any lack of watchfulness on the part of the citizens, but to the energetic efforts constantly put forth by the lighting company to give the very best service at the lowest possible price. It has, of course, had to contend with the antagonism of the corporation hater, and also with the citizen who does not understand that electricity cannot, like gas and water, be stored, and that the company must create an investment sufficient to take care of the peak load, which is used but a short time each day. But these conditions the management has cheerfully met. It has striven to please the intelligent business element of the community, and that it has succeeded is evidenced by the many kindly expressions made to me by representative bankers and business men concerning the company. It would, indeed, be difficult to find a public-utility company that is held in higher esteem by the citizens of a munici-

pality than is the Houston Light & Power Company.

This admirable state of affairs is largely due to the constant watchfulness on the part of William H. Chapman, general manager. Mr. Chapman is probably one of the most successful corporation men in the South. Previous to going to Texas, he was connected with various electrical companies in the North and installed a number of very successful systems. He has a host of friends in Houston, and his company is successful in every sense of the word.

STREET RAILWAY IN OKLAHOMA

In the successful development of street railway systems Oklahoma City, Oklahoma, affords an opportunity for interesting study. Theories that have been often pronounced impracticable have been put into practice with remarkable results in this hustling city, and the street railway system is today an object of much curiosity. In most municipalities the town creates the railway, but in Oklahoma City the railway virtually creates the town. That this has been largely true during the past ten years the most prejudiced corporation hater cannot fail to observe. The plans adopted in Oklahoma City were bold, and from a financial viewpoint exceedingly daring. They were carried into effect, however, by men who were willing to take the risk, and at this date it can be easily understood that the methods pursued were based on sound business principles and the only ones that could possibly apply to a growing city like Oklahoma.

The metropolis of the state of Oklahoma is without doubt the biggest city for its age in the world. Eighteen years ago what is now the state of Oklahoma was nothing but a wild territory, with Indian trails and bison paths as the only connections between different points. Today Oklahoma City has 50,000 inhabitants, with postal receipts and bank clearings showing gains aggregating thirty per cent. over the same month last year.

The Oklahoma street railway came into existence after the days of horse and cable railways, and therefore its present capitalization and bonded indebtedness do not represent money spent in installing systems that were tried and discarded.

It was the ideal of the owners to make the enterprise as far as prudent a factor in building up the community. To this end they laid tracks from time to time in all directions and greatly in advance of settlement. The company secured thoroughfares laid out for the special accommodation of rapid transit. Much more frequent service was put into effect than short-sighted economy would warrant or hungry stockholders would permit, but this policy had the effect of materially contributing to boost the city from 14,000, when the first lines were built, to a total population of 50,000 today, and this during the short period of six years.

The Oklahoma Railway Company has never suffered from high finance and low joints, nor has it ever been in conflict with the city. Naturally, it felt the effect of a bad spell of agitation during the formation of the state constitution. This agitation, however, was very largely directed at the steam roads, and it dominated the constitutional convention and the first election. It is apparent that the people of Oklahoma have discovered they had gone too far, as the legislature just adjourned not only refused to pass a single bill calculated to embarrass railroads as well as other monied interests, but repealed considerable of the work of the previous legislature and proposed certain amendments to the constitution seeking to remove some of its most objectionable features. The electric railway interests were not attacked to the same extent during the spasm, but were prejudiced on rules of practice in the courts in measures of liability for damages which made the existence of the claim department more troublesome and the path of the ambulance chaser comparatively easy.

The Oklahoma Railway Company was organized in 1902 at a time when the city embraced two square miles area and 14,000 people. On February 11, 1902, the company obtained a franchise unlimited in duration and exclusive on streets occupied and filed upon, provided the lines were built within twelve months after filing.

The franchise provides that, if the city possesses a population of 25,000 at the end of ten years, the company shall pay into the city treasury one per cent. of the gross receipts, and one per cent. for each additional 15,000 population, limiting participation to three per cent. of the gross earnings. It is estimated that the direct benefits conferred and

the per cent. tax makes the city a participant to the extent of fifteen per cent. of the net receipts. The city retained the right to purchase the property in 1932 and each fifteen years thereafter, the purchase not to prejudice outstanding bonds, except that the city can call them and pay them off at any purchase period. Any outside lines the company may control will have the right of access to the city, the appraisers to determine upon the tracks and rate of rental. The city and interurban lines included in one blanket mortgage at time of purchase will have its mortgage debt apportioned by the appraisers as between the city and company, the mortgagees to retain their lien upon property until the debt is fully satisfied.

Seven miles of track were built the first year, and seven small single truck cars were placed in service. Various extensions have since been built, until the trackage now aggregates forty-one miles, with an equipment of sixty-seven passenger cars. Twenty miles of the track is located on streets and twenty miles on private right-of-way; about eighteen miles of track are on paved streets. In the earlier paving the company used concrete stringers which proved inadequate under the recent installation of heavy equipment and the last two-thirds of paving has been placed in steel I beams imbedded in eighteen inches of concrete, which after a service of three years is believed to be indestructible under all ordinary traffic conditions. The standard city pavement is asphalt, but the street railway uses a brick surface.

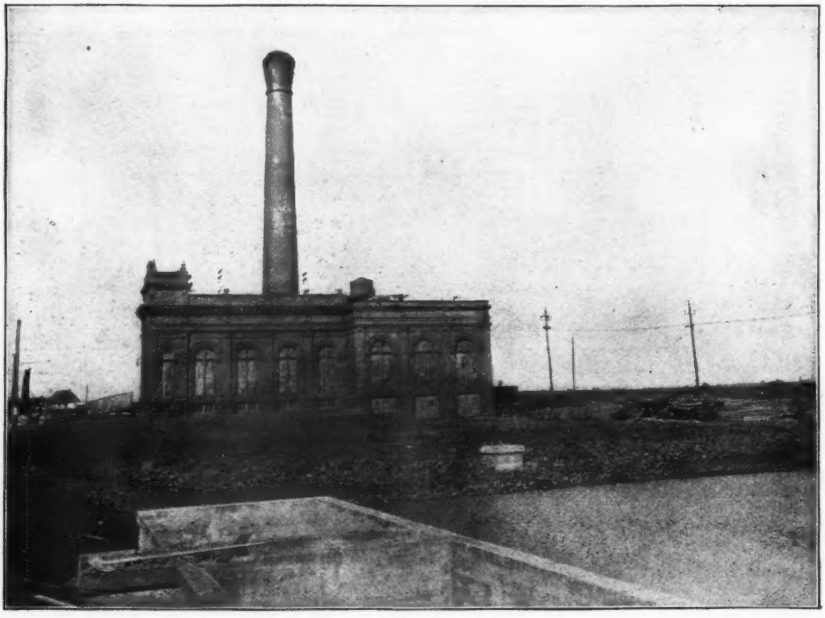
The company's policy of building to outlying districts concurrent with the platting and dedication of such districts has enabled it to require as a condition that the owners plat a private right-of-way in the center of the street desired for occupancy, from thirty to fifty feet in width, with roadway on each side of the private right-of-way

The company purchased its power up to 1908 from the local lighting company, at which time it placed its own power plant in operation. The power house is strictly modern and contains one Westinghouse Parsons turbine generator of 850 kilowatts

TRACK COMPLETED AND READY FOR BALLAST
Oklahoma Railway Company, showing type of heavy track construction

capacity and one Filer & Stowell cross compound engine direct connected to the generator. The building has capacity for doubling the present equipment.

The plant generates alternating current, which is transmitted five miles to a rotary substation centrally located in the city. The plant is designed as a combination city and interurban station. An artificial lake covering about 160 acres and holding 600,000,000 gallons was constructed near the power plant



NEW POWER HOUSE AT BELLE ISLE
Oklahoma Railway Company

primarily for a water supply, but is being beautified as a central feature of a 400-acre park. The water from the condensers traverses a four-acre bathing pool, sanded and graveled. The present rate of pumping renews the water in the pool every thirty-six hours. It affords outdoor bathing facilities from April to November.

The park system is not owned by the railway company, but by the same people. It is not an amusement park, but one for recreation and rest.

The principal owners of the Oklahoma Railway Company and the men responsible for the excellence of the system are Anton H. Classen and John W. Shartell. Mr. Classen is president and Mr. Shartell, vice-president and general manager. These gentlemen have demonstrated their faith in the city and their street railway investment will yield handsome returns.

* * * *

The traction affairs of Muskogee, Oklahoma, are not in a very satisfactory condition. Before any gains in municipal progress can be looked for, matters pertaining to street railway affairs must be better understood and less antagonism toward the company manifested. If there are matters in dispute regarding which an honest difference of opinion exists, the sooner they are brought to a final issue the better; but any drastic act on the part of the municipality will certainly create an unfriendly feeling toward the city which may prove to be very detrimental when new money is being sought to develop the public utilities or any other municipal enterprise.

There is no one who can honestly state that the Muskogee Street Railway Company is inferior to that of other cities of its class, for, as a matter of fact, the physical condition of the property is first class in every respect. The cars are of the most modern design, and there is no old junk in service, the trackage is in good condition, and no expense is being spared to provide comfort and pleasure to the patrons of the line.

The company maintains at its own expense an amusement park that would do credit to any city of twice the population. It is known as Hyde Park and is located about five miles from the city on the banks of the Arkansas River. Here amusement features of every popular description have been arranged, and a prettier spot would be difficult to find.

There have been matters of dispute between the street railway company and the municipality for some time, which on two different occasions have culminated in the city tearing up portions of the company's track. The first occasion was last February when certain members of the council, supplemented by police officers and workmen tore up the track at the intersection of C and Lawrence streets, because it was claimed that the tracks were improperly placed. The company contended that the government and the city as well fixed the crossing at C and Lawrence streets as it is, and the plans and maps on file show this to be a fact; hence, when the tracks were laid, they were put down in conformity to the street plans which were on file.

The last action on the part of the city was to tear up about 4,000 feet of track on Okmulgee Street. This drastic action was taken because of the failure on the part of the company to relay its tracks in another part of the street as directed by a resolution of the council. When the tracks were originally built, they were placed in the park section of the street, following resolutions to this effect which had been adopted by the city council. Later, the aldermen desired them placed in another part of the street and made a demand that the company comply. Following a failure to accede to the council's demand, the city tore up the track as above stated.

To an outsider who has no interest in the matter, it is apparent that the city's actions have been drastic, and it is questionable if such proceedings are approved by all the representative business men of Muskogee. The company has undoubtedly made mistakes, as all companies do, but the city of Muskogee cannot afford to depart from the ordinary customs in dealing with its public-utility companies when matters are in dispute.

The street railway must build months and sometimes years ahead of the city. The Muskogee traction company must have faith in the good intentions of the citizens to treat the corporation fairly, honestly and honorably. Nearly a million dollars have been

HOW THE CITY OF MUSKOGEE LEFT THE STREET RAILWAY TRACK AFTER THE COUNCIL MOVED IT

invested in the property, not by the superintendent in charge, but by Eastern investors who had faith in the good intentions of the people. It will require a large amount of additional capital to meet the demands which the growing city of Muskogee will make upon the traction company within the next three years, and no material municipal development can be expected unless it is accompanied by street railway improvements and development.

I am firmly convinced that none of the progressive business men desire to see any unwarranted attack made upon the traction company; but one and all insist that the company must not ignore the spirit of the franchise and the laws of the state. The general sentiment among the representative business men is to encourage Eastern capital

and to protect it in the enterprises in which it may be engaged, and there is no doubt but that the near future will see a more amicable condition of traction affairs in Muskogee.

As stated above, the physical condition of the Muskogee Traction Company is most excellent. The street cars can be pointed to with considerable pride by every patriotic citizen. The motormen and conductors are an efficient class of employes and compare favorably with those of any company in the Southwest.

The street railway system in Muskogee has been in operation four years, and the company was given a twenty-five year franchise. One of the features of this franchise was that the company should pave between the rails and nine inches on the outside thereof. The first legislature of Oklahoma enacted a law which provided that all street railway companies should pave between their rails and twenty-four inches on the outside of each rail. This law was clearly an abrogation of the company's franchise rights; however, it never contested the point, but complied with the spirit of this legislative act.

The system has 14.3 miles of track and twenty-one cars. M. R. D. Long has been in charge of the property for the past four years.

OAKLAND, CALIFORNIA

There is perhaps no American city which has been confronted with the task of taking care of an additional population of 100,000 acquired in a day, such as Oakland, California, was immediately after the San Francisco disaster of 1906. The great majority of these people became permanent residents. In order to accommodate this sudden influx of new-comers the public-utility companies came face to face with the fact that additional equipment and many extensions were immediate necessities. The increase in street railway earnings was $95,000 per month. Electric light, gas and water receipts were largely increased and the city suddenly awakened to the fact that it had grown from an infant to an adult in a day.

I was much interested in studying the plans by which the Oakland Traction Company met this sudden demand for increased railway service. That the corporation planned quickly and wisely is apparent to every student of public-utility matters who visits Oakland, and one of the most agreeable features is that the traction company met and successfully solved the problem without encountering any opposition of any kind from the municipal authorities. In most American cities the sight of a public-utility company enjoying such enormous gains in business would invoke the enmity and antagonism of that class of unfortunate persons who imagine that the corporation will soon control everything, much to the disadvantage of the poor; but in Oakland the municipal officers and citizens generally co-operated with the traction company in every possible manner in its efforts to satisfactorily meet the new conditions.

The history of the corporation is one that public-utility students can study with admiration. This company pays the highest wages to its employes paid by a street railway company in any city in the world, with the possible exception of Butte, Montana. What is the result? The 1,100 employes are men of education and ability—men who are not inferior to those found in banks and large business offices, and as a consequence the patrons get first-class service and courteous treatment at all times. Then again, the percentage of accidents is reduced to a minimum.

The work of building and equipping the Oakland Traction Company has evidently been in master hands. The roadbed is of the very best, and the cars models in every respect. The corporation manufactures its own cars.

In the early days in Oakland street railway affairs were in a chaotic condition. There were street-car companies galore; in fact, every part of the city had its own street railway company. There were no transfer arrangements, except in one particular instance, and passengers going a distance of three or four miles over different systems were compelled to pay from fifteen to twenty cents for the ride. Each company sought to get ahead of its competitors, and strife between the corporations was continuous. One of the most striking illustrations of the injudicious expenditure of money in street railway construction was brought into prominence by the old Piedmont Cable Company. At an expense of two and a half million dollars the company equipped its system with cables, which in a very short time were thrown into the scrap heap. The system was built with solid concrete conduits running for miles, all of which were torn up and abandoned

when consolidation of the companies took place. Over two hundred tons of dynamite were used in breaking up the concrete conduit.

In 1894 it became apparent that the street railway situation in Oakland was a deplorable one. The stockholders were compelled to meet a continuous assortment of assessments and much dissatisfaction prevailed. It was at this time that F. M. Smith, F. C. Havens and E. A. Heron undertook to effect a consolidation of the various companies and put the consolidated system upon a firm financial basis. The Piedmont, Mountain View, and Oakland Consolidated Railways were the first systems acquired. Shortly after the other lines came into the new company, and the old stockholders then saw the first rift in the clouds.

Financial interests possessed confidence in the men who had undertaken the consolidation of the different systems, and money needed on bond issues was easily obtained. The horse cars and the cable equipments were early abandoned, and the work of rebuilding the systems was carried along intelligently and regardless of cost. Everything was put in first-class condition, and as a result Oakland's street railway system, as before stated, is one of the very best in the country.

It was several years, however, before the stockholders received any dividends; in fact, for a while they encountered assessments; but they had faith in the management and the ultimate success of the company, and their hopes have been realized.

The gains made by the Oakland Traction Company during the past few years are truly remarkable. There are but few similar corporations that can point to such a remarkable gain during this period. Much credit is due E. A. Heron, president, and W. F. Kelly, general manager, for the efficiency of the system and the pleasant relationship that exists with the municipality. It is evident that these gentlemen understand the most modern and only sure way of conducting a great public-utility company for the best interests of all concerned. On every hand in Oakland I found business men who cheerfully asserted that the corporation always lives up to its obligations and never fools the people. This spirit of confidence on the part of the business interests of Oakland is an asset which in itself is worth millions.

The Oakland Traction Company is unique in that it issues no passes. Its president and manager pay their fares as do all its directors. In fact, the only persons carried free are policemen and firemen in uniform. The system consists of 166 miles of track and 220 cars. The officers of the corporation are: E. A. Heron, president; Henry Wadsworth, vice-president; S. J. Taylor, secretary; Frank Havens, treasurer, and W. F. Kelly, general manager. These gentlemen are also the officials of the Key Route, a separate corporation providing transportation facilities between San Francisco and the business and residence sections of Oakland. Large ferry boats are used in carrying passengers across San Francisco Bay. In Oakland the Key Route system consists of twenty-eight miles of track and fifty-eight cars. This corporation possesses a steam road franchise, but operates by electricity. It possesses excellent terminal facilities for a transcontinental line, and has right of way through the city of Oakland, from San Francisco Bay to Fruitvale. The corporation has secured 400 acres of land for terminal purposes. As is the case with the Oakland Traction Company, the Key Route system is first class in every particular.

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The struggle which the Peoria Terminal Company of Peoria, Illinois, has experienced since its organization is full of exciting interest. The company is now, however, in greatly improved condition, and its future is very encouraging. This is due to recent reorganization and more efficiency at the helm.

The system was projected in 1897 by the Electrical Installation Company of Chicago, L. E. Myers, vice-president and general manager. Mr. Myers' inability to finance the project resulted in the grants being acquired by Tucker, Anthony & Company of Boston, who built the line.

When the railroad was first promoted, it met with the strongest possible opposition from a rival railroad, which enjoyed a monopoly of all business passing through the Peoria gateway from railroads having their Southern and Eastern terminus at Peoria, and connecting with railroads having their Northern and Eastern terminus at Pekin. Most of these railroads held proprietary interests in what is known as the old Peoria & Pekin Union Combination. The new road

opened up a line of competition for the transfer of freights between the two cities and railroad connections, and immediately a railroad war was in progress. The rates fell from fifteen to two dollars per car. This, of course, made the business unprofitable and consequently handicapped all efforts to develop the property. But the Chicago & Alton and the Chicago, Rock Island & Pacific railroads have no proprietary interests in the Peoria & Pekin Union, and after the expiration of certain contracts of the Chicago & Alton in about a year, will use the Peoria Terminal Company's system as a gateway for all business from the South into Peoria, and with the assistance of the Chicago, Rock Island & Pacific, with its business South from Peoria, will make the property a good paying investment.

Besides, considerable increase in business may be expected in consequence of the congested conditions now existing with all railroads entering Peoria and Pekin. This is bringing a constantly increasing freight traffic over the line.

There is a wide field for expansion of the company's freight traffic, and every possible means is being effected to acquire the business.

Since reorganization, the company's passenger earnings have shown a very satisfactory gain; in fact, a distinct gain of 106,000 passengers was made during the fiscal year ending June 30, 1908, over the previous year, which shows a gain of six and one-quarter cents per motor-car mile in the earnings. This has been accomplished through more efficient management, whereby the cars are now run on regular schedule time. Half-hour trips are made between Peoria and Pekin.

The Peoria Terminal Company has trackage arrangements with the city lines of the Illinois Traction Company, but efforts are now being made to secure a franchise on Washington Street a distance of about two miles, which, when it is granted, will enable the company to enter the heart of the city over its own tracks, and therefore greatly reduce its schedule time between Peoria and Pekin.

Considerable improvements are contemplated, such as double tracking the entire system, new cars and additional freight-handling facilities. The present rolling stock consists of five engines, fifty coal cars and ten motor cars.

Judge W. T. Irwin is president of the company and takes an active part in the affairs of the system. He believes that the only way to build up the business is to provide efficient service at reasonable rates and to treat the public honorably at all times. Mr. E. A. Burrill is general manager. He is indefatigable in his efforts to promote the interests of the company, and, with such efficiency in management, I do not hesitate to predict success for the reorganized company.

SOMEBODY

From the book "Heart Throbs."

Somebody did a golden deed;
Somebody proved a friend in need;
Somebody sang a beautiful song;
Somebody smiled the whole day long;
Somebody thought "'Tis sweet to live";
Somebody said "I'm glad to give";
Somebody fought a valiant fight;
Somebody lived to shield the right;
Was that "somebody" you?

WITH the closing autumn and early winter months, the season for Grand Opera opens, not alone in the great metropolitan theatres, where many thousands of dollars are willingly spent for the supreme pleasure afforded, but in the humblest homes of all lovers of good music. An increasing appreciation of this form of the world's greatest music has been marked during the last two years, and much of the credit has been given to the genius and energy of the indefatigable Oscar Hammerstein; there is still another and not less efficient factor in American musical development—the Grand Opera artists themselves, by lending their talents and highest flights of song to making beautiful musical records for the great talking machine companies, have allied with other agencies in developing a gigantic and almost universal musical educational movement, which reaches by practical means the whole nation.

It is conservatively estimated that there are over three million individual record-buyers each month. Some lovers of good music who can afford it spend from one dollar to two dollars per month in the purchase of records, though these are exceptional cases. Though the total sum expended for records runs into many millions of dollars annually, yet the money so spent by each individual is not a serious drain on the resources of any household. Despite the large value of this output, in which the public has both a financial and ethical interest, there has hitherto been no attempt at a periodical and merited appreciation and review of these records by newspapers or magazines. The NATIONAL MAGAZINE is taking up a monthly review along this line in an absolutely new and independent way, aided only by the desire of the several companies for just criticism and honest praise.

There has been a remarkable production of new records for the month of October, every phase of music being considered; in listing this latest output, there is no attempt to give more than a very concise criticism of the different numbers.

VICTOR RECORDS FOR OCTOBER

5733 "Sweetmeats"; Two-Step, by Wenrich.

As is usual, a new selection by Pryor's band heads the Victor list. This ragtime two-step is fully up to the standard set by former Pryor marches.

5735 Rondo from Serenade (Opus 525), by Mozart.

31747 Winter-Marchen—Romanze (Opus 112) by Saro.

The Victor string quartette makes its initial bow to the Victor public in these two records. To those who like the soft easy flow of stringed instruments these records will be a delight.

58012 Songs without Words, "The Cloud" (Opus 53), by Mendelssohn.

This is the third record by the Renard Trio, consisting of Violin, 'Cello and Pianoforte, and is fully up to their former renditions. It is a Mendelssohn gem in a rare setting.

5741 "Ich Liebe Dich" (I Love Thee), by Grieg.

This famous love song is sung in English by Frederick Gunster, a new tenor, in an easy, simple, natural style that will gain him many admirers.

5739 "The Last Rose of Summer," by Moore.

This old-time melody has a warm spot in the hearts of the public. This record by Elizabeth Wheeler is one more good addition to those who have sung the favorite ballad.

5738 Gobble Duet from "Mascotte"—"When I Behold Your Manly Form," by Audran.

The revival of this comic opera as promised by Mr. Hammerstein this season is an added reason for giving this charming duet to the public. It is sung in good spirit by Elizabeth Wheeler and Harry MacDonough.

31748 Gems of "The Prince of Tonight," by Hough-Howard.

The grouping of new operatic medleys on one record is the Victor way of preserving the best songs of light opera. Six of the best song hits of this opera are to be found on this one record.

31749 "Holy Art Thou" (Music of Handel's Largo), by Handel.

This choir record by the Trinity Choir is one of the best of all the sacred anthems. The voices are well adjusted and it is splendidly sung.

71045 Prelude (Op. 10, No. 1), Study (Op. 28, No. 1), by Chopin.

A good piano record is something of a novelty. This record by Wilhelm Backhaus is by far the best of its kind and portends a great possibility. On the Auxetaphone it is superb on account of the greatly increased volume and resonance.

61192 "Guillaume Tell"—Barcarolle (Come, Love, in My boat), by Rossini.

61193 Mignon—Elle ne croyait pas (Pure as a Flower), by Thomas.

In these two records the Victor brings out another new tenor in M. Regis of the Marseilles opera. These new singers come as a result of a constant search of the opera houses of Europe for new voices of rare quality, and in this new artist there will be no disappointment.

The three new records by Tetrazzini are remarkably fine etchings of her wonderful voice.

92067 Lucia di Lammermoor—Regnava nel silenzo (Silence Over All), by Donizetti.

This air from Lucia di Lammermoor, the most popular of the seventy operas written by Donizetti, with its endless flow of melody, gives the great Tetrazzini opportunity to display her wonderful voice with all the fascination of her art.

92068 Ballo in Maschera—Saper vorreste—Canzone (You Would Be Hearing), by Verdi.

When Verdi composed this American opera with its scene laid in Boston away back in Colonial days, he little dreamed that this air would be sung in thousands of American homes through the wonderful agency of the musical record. Nowhere is Tetrazzini's voice heard to better advantage than in the flute-like runs and scales of this delicious air.

92069 La Sonnambula—Ah, non credea mirarti (Could I Believe), by Bellini.

Bellini's music is particularly suited to the voice and his operas have been in the repertoires of all the famous singers from Pasta down to the present day. A beautiful 'cello obligato adds sympathy and tenderness to the melody, which is brought out in all its richness by the great soprano.

Under the heading of an important announcement, the Victor company herald four records by Lee Slezak, the famous Vienna tenor, soon to come to the Metropolitan Opera in New York.

61201 Stumme von Portici—Schlummerlied (Slumber Song from "Massaniello"), by Auber.

Auber, the composer of Massaniello, from which this slumber song is taken, is deemed to be the founder of Grand Opera. He was the first to produce stirring mass effects and bring the local color of the orchestra to a high state of perfection. In this selection, Slezak's voice is strong and full, and fearfully loud at times, with exquisite shading by way of contrast.

61202 Cavalleria Rusticana—Siciliana (Thy Lips Like Crimson Berries), by Mascagni.

This selection from a comparatively recent opera is familiar to many. It is sung with a rare tone value and the soft, sweet accompaniment blends in harmony with his clear, resonant voice.

61203 Lohengrin—Nun sei bedankt, lieber Schwan (Thanks, My Trusty Swan), by Wagner.

As a native German tenor, Slezak gets a great deal out of this selection that is sometimes missed. He loses none of the Wagnerian effect and gives excellent accent and clearness to his singing.

61204 Romeo und Julia—Ach geh auf, moch erbleichen (Fairest Sun, Arise), by Gounod.

Notwithstanding the popularity of Faust, the French regard this opera as of greater musical value than any other written by Gounod. It is unquestionably one of the finest in the range of the tenor voice, and from the first to the last long-sustained note, Slezak sings it exceedingly well.

COLUMBIA RECORDS FOR OCTOBER

The Columbia company have in their October list five double-disk records by Guiseppi Campanari, the great baritone.

A740 Nozze di Figaro—Se vuol ballare, by Mozart.
Nozze di Figaro—Non piu andrai, by Mozart.

Mozart's keen appreciation of dramatic effect is shown nowhere better than in Figaro. Perhaps these two selections are as good an example of his admirable handling of the human voice as can be found. These records ring with Campanari's strong, full voice.

A5125 Carmen—Canzone del toreador, by Bizet.
Un Ballo in Maschera—Eri tu, by Verdi.

The pleasure-loving bullfighter of Carmen—the Toreador song has an individual musical language of its own. It is one of the greatest of baritone solos, and has in it all Bizet's delineation of fatalistic bravado and tragic denouement. "Eri tu" of the "Masked Ball" is a good companion piece, and both selections show Campanari as one of the world's greatest baritones.

A5126 I'Pagliacci—Prologue, by Leoncavallo.
Myosotis—Melodia, by Tirindelli.

Leoncavallo, the composer of I'Pagliacci and La Boheme, welds together Italian melody and Germany harmony and is regarded as a legitimate successor to Verdi. This prologue has long been a favorite concert number. "Myosotis" is a melody which is sung exceedingly well.

A5127 Herodiade—Vision fugitive, by Massenet.
Musica proibita—Melodia, by Gastaldon.

As a master of dainty bizarre effects, Massenet is probably better known for his "Thais" than for his "Herodiade." Nevertheless, this tuneful selection from his earlier opera will live as one of the choice bits of song writing for the baritone voice. This and the Musica proibita melody Campanari sings with distinction and ease.

A5128 Il Barbiere di Siviglia—Largo al factotum, by Rossini.
Tarantella Napoletana, by Rossini.

The Barber of Seville is one of the most successful comic operas ever written, even if Rossini only took twenty days to complete it. As a lyrical composer, none stands higher than he, and the spontaneous vivacity of this selection is ably carried by Campanari. In Tarantella Napoletana, the stirring melody and brilliant effects make it a radical antithesis of the art of Wagner; it is sung to perfection.

A730 Le Rhone et la Saone—Polka, by Roussel.
The Mosquito Parade, by Whitney.

These two band selections are aglow with color and marked with a vivacity of character one likes to hear in a good band selection. The first is by the famous Artillery band of Mexico, the second is played by the Columbia band.

A735 **"Pipit and Thistle-Pinch," Piccolo duet, by Kling.**
"Marche des Jolies Femmes," Bell solo, by Carosio.
Marshall Lufshy and V. Falvella furnish an interesting novelty in this new piccolo duet. Supported by an orchestra accompaniment, the bird-like notes in their brilliancy and spontaneity produce an effect that is odd and pleasing. The bell solo played by Charles Adams, with orchestra accompaniment, is clear and loud.

A739 **"The Homeland," Sacred solo, by Hanscom.**
"Anchored," by Watson.
Mrs. A. Stewart Holt, with clear diction and artistic expression, sings this familiar contralto solo with a violin and piano accompaniment. George Alexander sings "Anchored" to an orchestra accompaniment. Few songs have been more widely sung or have longer held the esteem of the public.

A738 **"Yacht Club"—Pas de Patineurs, by Eichfuss.**
"El Veintitres de Infanteria"—Marcha, by Pacheco.
These two band selections are in strong contrast. The first selection, played by the Royal Regimental Band, is light and tuneful, the second, played by Prince's Military Band, is strong and vigorous, with rhythm and wholesomeness.

A5122 **"Sinnbild Walzer," by Lincke.**
"Pres de Toi" (Near Thee) Waltz, by Waldteufel.
These two waltz-airs are both played by Prince's orchestra, and are in perfect waltz tempo. They are what might be termed utility records for those who wish to use the music for dancing. The first is by Paul Lincke, well remembered as the composer of "The Glow Worm."

A5124 **"My Dreams," by Tosti.**
"Roses," by Adams.
These two tenor solos are sung by John Bardsley, both with orchestra accompaniment. The former is one of the most popular and widely sung compositions of Tosti. The air is rich and expressive and gives a wide range to the voice. "Roses" is another celebrated English composition, and is by the same composer as that of "The Holy City." Both of these songs Mr. Bardsley sings in fine voice.

A733 **"My Little Eva," by Lowenwirth and Cohen.**
"When I Dream in the Gloaming of You," by Ingraham.
All the world loves a lover, and a love song is always popular with the masses. These two tenor solos are well above the average of sentimental songs. The first selection is sung by Frank Reade with expression and distinctness. The second selection is by Harry Tally, well known for the wide compass and rich even quality that marks his singing.

EDISON RECORDS FOR OCTOBER

Victor Herbert, the well-known musician and composer, contributes three of his best selections to the Edison Phonograph this month.

10217 **Oriental Dance, by Victor Herbert.**
It is a question if any other orchestra leader could get as much out of his compositions as Victor Herbert does with his own orchestra. This weird, unusual theme, from the musical extravaganza, "Wonderland," is well handled and calls up visions of "The Streets of Cairo."

239 **"It Happened in Nordland," by Victor Herbert.**
This popular light opera is full of catchy airs and tunes. As played by Mr. Herbert and his orchestra on the amber roll record it has an added charm, showing as it does a master's touch in the phrasing and changing tempo.

217 **"Garden Melody," by Schuman.**
This selection by the famous boy violinist, Albert Spaulding, is not disappointing even to those who have heard him in concert work. The same sweet tones, vibrating at times with the depth of feeling usually associated with the 'cello are carried to the end, the last note fading away as in the distance. It is an exceptionally good violin record.

223 **"Seneca Waltz," by Frosini.**
This accordion solo, played by the composer, is without question a rare example of record making. A simple instrument, in the hands of a master it becomes a whole orchestra in itself.

10228 **"Hola Waltz," by Carl Friedemann.**

226 **Old Comrade's March, by C. Teike.**
These two band selections are played by the United States Marine Band, with all the dash and go so necessary to stirring brass instrument music.

220 **Selection from "Maritana," by W. V. Wallace.**

10220 **"A Passing Fancy," by C. H. Rollinson.**
The Edison Concert Band has fully sustained its enviable reputation in these two October records. The old familiar airs from "Maritana" ring out clear and true. "The Passing Fancy," with its rare handling of reed and brass instruments, is beautiful indeed. It isn't long enough. It might well have been on an amber record.

10230 **"Santa Lucia," Old Italian Folk Song.**

225 **"Love's Old Sweet Song," by J. O. Molloy.**
In singing these delightful old selections, as male quartettes without accompaniment, Whitney brothers have added two more good records to their already long list. A good male quartette has a fascination, and the Whitney brothers are finished artists in this line.

224 **"I'll Go Where You Want Me To Go, Dear Lord," by Carrie E. Rounsefell.**
This sacred song, as sung by James F. Harrison, is wonderfully perfect as a record. The rich full voice, deep in reverence and feeling, has the conviction and sincerity essential to the singing of sacred songs.

232 **"Dream of the Tyrolienese," by August Habitsky.**
This delightful serenade, by the Edison Venetian trio, consisting of violin, flute and harp, is soft and musical, like a low, sweet lullaby.

10232 **"Two Old Songs," by Albert Benzla.**
This superb bell solo is not loud and clanging as is often the case with such records. The clear, sweet bell tones give these two old familiar airs, "Suwanee River" and "Blue Bells of Scotland," an added tenderness.

215 **Selections from "The Red Mill," by Victor Herbert.**
This selection includes eight of the popular airs from "The Red Mill," conducted by the composer, and is played with all the snap and vim of his rare style.

IT was a dear old German lady at the White House who first told me of that sweetest of words in all European tongues, excelling in filial devotion even our Saxon "mother"—the German "*Mutterchen*," which expresses all the deeper tenderness and loving devotion due to motherhood in the serenity of the sunset of life, and something of the deference and reverence with which devout women name the Madonna. With this exclamation the gentle German woman gazed at the dear old lady who graces the front page cover of the "Heart Throbs" book.

How often we find that one language supplies a word that no other can duplicate. It is believed that in the future, when a word of this kind occurs, instead of trying to literally translate it in the translation department at Washington, the word itself will be used, carrying with it its old and full significance.

* * *

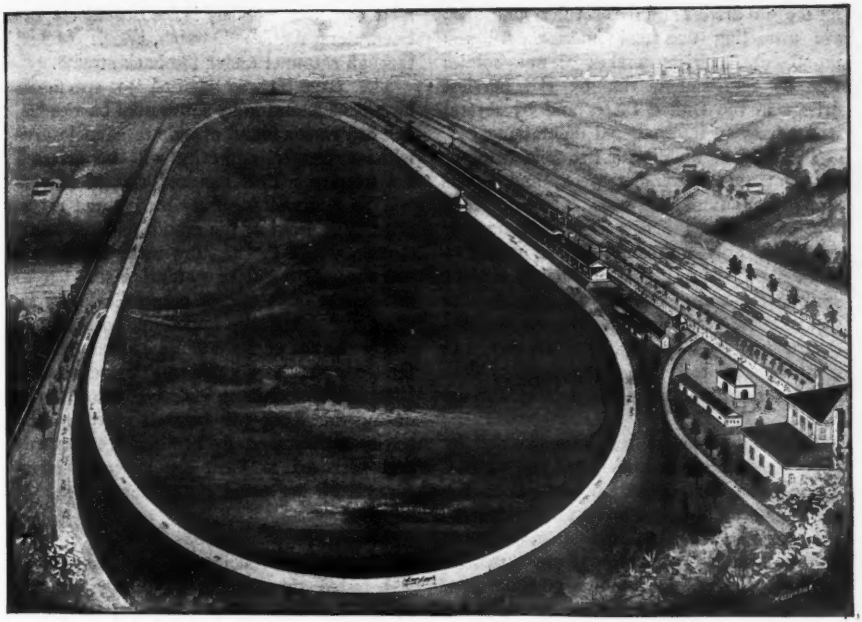
THE first Emerson piano was made sixty years ago. It was a legitimate outgrowth of the spinet of the fifteenth, and the harpsichord of the sixteenth century. The name "Emerson" cast in the plate of a piano from the very earliest was made to mean something, to stand for something—and that something was merit. Since 1849 the Emerson piano has meant honest endeavor persistently applied toward achieving perfection. Now, as then, the Emerson pianos show wondrously the tremendous forward steps in construction, the surprising tonal effects, and the artistry even of piano case making, with its incidental painstaking cabinet work and its art wood carving. In 1870 the upright piano was made commercially practicable. Twenty years later, or in 1890, the baby grand took its place among the world's musical instruments. Ten years later came the last great invention in piano construction—the piano player. During all these evolutions the Emerson has kept a leading place, and if the spinet be the first, the last word is easily the Emerson. The Emerson is constructed along lines that make for perfection in a medium-priced piano.

* * *

EVER since I enjoyed a railroad ride with William T. Stead, going with him from London to Wimbledon, everything in quotation marks that has come from the pen of W. T. S. has an interest. His recent article on the effect of aeroplanes, as affecting the end of warfare, is interesting, and shows that the human race will have to "behave or get off the earth," unless they elect to return to the habits of bygone ancestors and live in caves. As Mr. Stead remarks:

"The human race is absolutely unprotected from above. What, then, is demanded? The governments should federate into one great world state, with international tribunals interpreting the laws, and an international parliament without whose command no war could take place on the earth, in the air, or on the sea."

He insists that "armaments will go as armor went, until twelve-inch guns will be as obsolete as the bow and arrow. . . . The aeroplane places illimitable forces of destruction at the command of anybody who



ATLANTA'S NEW TWO-MILE AUTOMOBILE SPEEDWAY

can raise $50,000 and find half a dozen desperadoes to do his bidding."

As the personal friend of the Czar and other great rulers of Europe, and himself a personality of international force and influence, Mr. Stead will make the most of effecting his dreams of the millennium.

* * *

THE completion of Atlanta's immense auditorium last January, which was dedicated by the famous "'possum" dinner to President-elect Taft, provided for the first time in the South a building suitable for gathering large masses of people in national conventions. With this equipment Atlanta citizens asked for, and secured, the consent of automobile interests to hold in this building their exposition the first week in November, 1909. Practically every manufacturer of automobiles and automobile appliances in this country has applied for and has been awarded space in this exposition, where for the first time the models of 1910 will be formally offered to the world.

Coincident with this great show will be held the great automobile endurance contest from the *New York Herald* building to the office of the *Atlanta Journal.* Inaugurated through the enterprise of these two influential journals, this event has excited the lively interest of the leading manufacturers and of many private individuals, who will compete under approved regulations for valuable awards, both in the professional and amateur classes. The contest has been timed to end in Atlanta during the opening days of the great exposition.

Under the leadership of the *Atlanta Constitution* another series of contests has been arranged, which, starting from more than a score of cities in Georgia and nearby states, will land the entrants in Atlanta at the psychological moments of the Auto Week.

Planned in the interests of the good roads movement, in addition to the valuable prizes offered to successful drivers, large sums of money have been put up as awards to such sections and counties, from the Florida line to the borders of Jersey, as present the longest stretches of "good" roads.

The automobile races, November 9 to 13,

for the best drivers and the speediest machines, are attracting universal interest. All the prominent American makes of automobiles will be represented, run by the nerviest drivers in the United States and by several who have won international reputations.

The idea of building a two-mile track in time for this November week, and exclusively for automobile tests, was conceived last May. On the first day of June this track was only a dream. In less than five months the quick action of Atlanta citizens secured the land. October 15 must see the great course ready for the contests, but the contractors, by working night and day, will complete their task two weeks ahead of time and a full month before the time set for the races.

This unique course has been planned by expert engineers, who anticipated and avoided every defect, and they have made good the claim that it will be the safest in the world.

It will cost, completed, more than $300,000, and is located eight miles from Atlanta's business center. Two miles—10,560 feet—long, measured three feet from the pole, the track has a width of sixty feet on the back stretch and on the turns, the home stretch being one hundred feet wide. The curves, built on a radius of 880 feet, are banked ten feet, or one foot in six. The two miles are divided into four equal lengths of 2,640 feet each—the home stretch, the back stretch and each of the turns.

The surface of the track is as smooth as a board floor, free from even a pebble to jar a swiftly moving car. It is eight inches thick, of Georgia clay, sand and Augusta gravel, bound together in a solid mass by asphalt. Completed early in October, during the entire month it will be tested thoroughly by some of the most expert drivers in the world in their daily practice for the great races.

The grandstand is 1,800 feet long and will seat comfortably at least 25,000 people. Bleachers will accommodate 15,000 more, and several large club boxes, which have been sold to various organizations, will seat several hundred spectators close to the last turn before the finish. Terminal facilities for all transportation lines and the admission gates are located behind the grandstand. Parkage for at least 1,000 automobiles, from which spectators may view the races from their own automobiles, is located inside the track along the home stretch, and is reached through a tunnel under the back stretch.

The large spaces allotted to spectators have been fenced in by substantial barricades, and any person found outside these enclosures without proper authority will be arrested for trespass. Two hundred special officers will be assigned for duty during the races. Directly in front of the grandstand the home stretch, where the exciting races finish, will run through a cut of natural earth, ten to fifteen feet high, almost perpendicular in its slope and practically impossible to scale.

The homes of the Atlanta citizens will be thrown open to supplement the overtaxed hotel accommodations, and visitors to Atlanta during this week will be well cared for by a city accustomed to handling big crowds and prepared to meet the expected emergency with her usual genial hospitality.

* * *

A SURPRISING interest has been manifested throughout the country in the revelations concerning "Glorious Old Georgia" contained in the NATIONAL MAGAZINE articles on that state. While Mr. Agassiz's story on the remarkable importance and rapid growth of the pecan industry was being read and commented on by hundreds of subscribers, confirmation of the published details arrived at the editorial desk in the shape of a package of pecans from The G. M. Bacon Pecan Company, De Witt, Georgia, illustrations of whose handsome nuts and trees attracted much attention and brought forth many inquiries. In size and quality these nuts far surpass ordinary pecans, each one being almost as large as an English walnut and possessing the veritable "paper shell."

Since the various health cults have declared that nuts and fruit are the ideal diet for the human race, interest in these crops has kept pace with the rapid increase of the product; and now it is no longer necessary to import English walnuts, for American pecans are found not only in every state in the Union but all over the world. Nuts are no longer a mere garnish for the dinner table, to be supplied by occasional autumn nutting expeditions; in many homes they are an important portion of every meal, and continue to play their prominent part in festivities

and in filling the Christmas stockings. American nuts are now produced and marketed as a substantial and well-developed industry, and are supplied on wholesale scale to home and foreign markets.

* * *

IF the Simmons Hardware Co. had existed in George Washington's time, that enterprising firm would doubtless have supplied "truthful George" with a "Keen Kutter" hatchet with which to fell the cherry trees.

Now comes the news that the irrepressible Peary took only Keen Kutter blades when he went after the tough old North Pole. Every knife, every axe, saw and everything of the kind used by Peary and members of his recent successful expedition were made by the Simmons Hardware Company.

Peary's triumph is largely the result of his exacting care in selecting every part of his equipment; and the fact that he selected "Keen Kutter" tools and found them dependable, in those very low temperatures in which steel implements usually break with a brittleness like glass, is a test that means much for all "Keen Kutter" goods.

Commander Peary also selected several "Keen Kutter" tool cabinets as gifts to the Eskimos. It may not be generally understood, but these primitive people are exceedingly ingenious, and even with their own rude tools often accomplish wonderful success in carving and etching. Peary well knew that no more civilizing influence could be exerted upon his faithful followers in the far North than the best and most serviceable mechanical tools.

* * *

"POLLY OF THE CIRCUS"

IT is safe to assume that the play which enjoys a steady run has in it heart interest —mere art interest is not so sure to attract. Before I went to see it, I heard everyone speaking well of "Polly of the Circus"; at least I felt that I must have "Polly" on my visiting list. Arriving late, I looked upon the scene in which the good old clown, Toby, was bidding good-bye to a little girl, a bareback rider in an old-time wagon circus, who had been injured by a fall and was now at the parsonage where it was hoped she would recover from the injury sustained in her "act." There, too, was "Mother Jim," a circus canvass man; the kindly tenderness of these rough men was very evident as they said good-bye to their little playfellow and commended her to the care of the parson. The edict had gone out that the show must "move on"; no other course open but to leave Polly behind. With uplifted hands Toby looked where the little girl was lying, sorrow in his eyes, while the rough grief of the canvass man was one of those things that bridge the chasm between the circus and the church.

When the minister learned that the village hospital was out of commission, he did not hesitate to throw open his home to the injured girl, although there was some demur in the village as to the propriety of permitting the parson to take a circus girl to his house, even to save her from death.

* * *

The opening of the second scene is most impressive. Lying in bed is "the bird with the broken wing." Mandy, the colored servant, is trying to keep the little circus rider quiet. In comes the parson and an interesting dialogue takes place. The uncouth vernacular of the girl—who had never before seen anything outside of circus life—that calling followed by her father and mother, grandfather and great-grandfather, was in strong contrast to the refined accents of the young minister. Polly seemed to know absolutely nothing outside of the ring and her "act." She had never heard of the Bible. Looking out of the window, she listened to the chimes of the church bells and asked the parson what it all meant, finally suggesting that he should read to her from "his book," and she would listen while he "did his stunt." He read the touching story of Ruth and Naomi:

"Entreat me not to leave thee, nor to return from following thee, for thy people shall be my people; thy God shall be my God; where thou diest I will die and there will I be buried."

* * *

Next scene shows the real circus ring, with the clown and Polly, who is instructing her understudy; there is riding of all kinds, vaulting at the bar, vaudeville, the tumblers and all of the side shows—a perfect circus. Through the kindly offices of "Mother Jim," softened by his touching tribute to

old Toby, who has died during the year of her absence, Polly listens again to the young parson as he repeats the words of Ruth, "Entreat me not to leave thee"—a novel form of wooing in modern times.

The closing scene is before the ivy-covered church; Polly and the parson enter and stand in the moonlight, watching the circus vans move away up the hill and drop slowly out of sight.

* * *

Mabel Taliaferro in private life is Mrs. Thompson, the wife of the manager and producer of the play, who is also the proprietor of Luna Park on Coney Island, and the creator of the New York Hippodrome. There is a pathetic quality in her acting which goes straight to the heart. The simplicity and genuineness of it is beyond description, and everything is so well balanced that it does not seem in the least stagey or forced. It is realistic, yet suggests the thought of the kinship of all humanity and the unity that may exist between the people of the circus and the people of the church.

* * *

THE particular attention of our readers is called to an advertisement in this issue under which "Poultry Success" of Springfield, Ohio, the world's leading and best poultry journal, is offering, in connection with a year's subscription, the great Briggs System and Secret books, making it possible for everyone, beginner or experienced poultry raiser, in confined quarters or where poultry has free range, to be more successful in handling poultry than by any other system.

The price of the Briggs book has just been reduced from $5.00 and is now offered in connection with a year's subscription to "Poultry Success" at only $1.25.

We feel confident it will be profitable for our readers interested in poultry matters to investigate this offer and send to "Poultry Success," Springfield, Ohio, for samples and circulars, although the ad. appearing in this issue gives full information.

* * *

IN the NATIONAL for March, ex-Secretary Newberry of the Navy Department pays a merited tribute to the practical benefits secured by enlisted men from Correspondence Schools. "Men are encouraged to take correspondence school courses and in this way fit themselves to attend the technical classes maintained by the departments, or to make preparation for advancement to warrant commissioned rank."

Truman H. Newberry, be it known, is a practical business man of Detroit, who not only inherited one fortune but has made another by his own effort.

Another Detroit business man, Mr. W. A. Shryer, President of The American Collection Service, has also been organizing men to better their condition, enabling them to establish themselves as recognized factors in American business life.

In these days merchants and manufacturers are obliged to sell their goods largely on credit, and The American Collection Service has become a necessary part of the nation's commercial organization. The opportunity to become an integral portion of an institution doing such an amount of good is being appreciated by ambitious men throughout the country. The opportunity to become an order-giver instead of an order-taker is being fully appreciated by the man with little or no capital to invest. In these days of aggressive combinations, the opportunity to establish a business free from dictation of any possible combination is, by the very nature of affairs, a most welcome release from salaried drudgery.

The American Collection Service headquarters are 236 State Street, Detroit, Mich.

* * *

EVERY lady who desires to keep up her attractive appearance, while at the theatre, attending receptions, when shopping, while traveling and on all occasions, should carry in her purse a booklet of Gouraud's Oriental Beauty Leaves. This is a dainty little booklet of exquisitely perfumed powdered leaves which are easily removed and applied to the skin. It is invaluable when the face becomes moist and flushed and is far superior to a powder puff as it does not spill and soil the clothes. It removes dirt, soot and grease from the face, imparting a cool delicate bloom to the complexion. Sent anywhere on receipt of five cents in stamps or coin. F. T. Hopkins, 37 Great Jones Street, New York.

NABISCO

SUGAR WAFERS

with

Turkish Parfait

Desserts of all descriptions, ice creams, sherbets, ices, frozen puddings, beverages—all attain distinction when served with NABISCO Sugar Wafers—the superlative of dessert confections.

TURKISH PARFAIT

Put quarter-pound freshly roasted coffee berries in basin, add small piece vanilla pod, pour over pint of hot cream and allow to infuse half hour. Cream yolks of six eggs with quarter pound sugar; when well beaten add to coffee infusion. Place basin over saucepan of boiling water and stir until mixture acquires consistency of thick cream. Strain, add half-pint cream and beat over ice until quite cold. Serve with NABISCO Sugar Wafers.

In ten cent tins—also in twenty-five cent tins

NATIONAL BISCUIT COMPANY

SIR ROBERT WHITE

O'ER russet fields of ripened corn,
From out the purpling hazel's bourn
Floats a clear call to Arcadie.

No need of sight to know that fall
Brown nuts to earth whence comes this call,
This reedy call to Arcadie.

No need of ear to know the pipe
Of Syrinx plays o'er Autumn ripe
In spicy glades of Arcadie.

That woodsy notes are fluting light
In tune with throat of Old Bob White
Whistling a call to Arcadie.

His clear note rounds less shallowly
Than reeds of Pan blown mellowly
Through thymy aisles of Arcadie.

I, glad, from trodden, dusty road
Would turn swift feet to sylvan sward
And heed your call to Arcadie.

—*Austin Arnold McCausland.*

LITTLE HELPS FOR HOME-MAKERS

For the Little Helps found suited for use in this department we award six months' subscription to the National Magazine. If you are already a subscriber, your subscription must be paid in full to date in order to take advantage of this offer. You can then either extend your own term or send the National to a friend. If your Little Help does not appear it is probably because the same idea has been offered by someone before you. Try again. We do not want cooking recipes unless you have one for a new or uncommon dish. Enclose a stamped and addressed envelope if you wish us to return or acknowledge unavailable offerings.

SKIRT-HANGING MADE EASY

By Margaret M. Kenney

To turn up evenly the bottom of a skirt for hemming try this method: Place the end of a yardstick on the floor close to the skirt and at the top of the stick place a pin in the skirt; move the yardstick little by little around the body, placing a pin in skirt at top edge of stick each time it is set on the floor. After going thus all around the skirt, lay it on a bed and place one end of the yardstick at the line of pins, and at the lower part of skirt, place a pin as far from the end of yardstick as desired around in this manner, then turn the hem at new line of pins and baste it. This method insures a perfect-hanging skirt and makes it possible to hang a skirt on one's own person unaided and without difficulty. I would be glad to have this useful hint reach the many home-makers who read your most excellent magazine, for it will mean so very much to them in saving of worry, labor and time.

RHUBARB AND FIGS

By Mrs. W. W.

Take one package of figs and one orange or lemon, cut in very small pieces, cover with water and cook until tender; stir this into four quarts of stewed rhubarb, add sugar to suit the taste and cook until thick. Very good and rich.

Patent Leather Shoes

Use the white of an egg to clean patent leather shoes.

Victrola

Only life itself can compare with the Victrola.

It is the newest and greatest of all musical instruments. It marks the highest point of perfection ever reached in any musical instrument. Second only in importance to the invention of the Victor itself.

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New Victor Records are on sale at all dealers on the 28th of each month.

POOR MAN'S CAKE

By Gladiola

Five eggs, five level teaspoonfuls of sugar, pinch of salt, flour enough to roll; beat the whites and yolks separately; add the sugar to the yolks, then stir in the whites; roll out very thin, cut in diamonds or squares and fry in hot lard; when done, sprinkle with sugar.

To Peel Boiled Eggs

Boil the eggs in salt water; the salt cracks the shell and loosens it from the egg.

—

Your letter, telling me you were going to give me the magazine for my "Little Helps" at hand; many thanks.

It is beautiful and fresh here in the country just now as we have had a nice rain and "bride-wreaths," all over town, are so full of bloom that it looks as if drifted full of snow; and the dear little June pinks are beginning to bloom, and the forget-me-nots are budding. I sometimes think I will put an "ad" in some paper or magazine, stating I would send a nice root of the English forget-me-not, postage prepaid, for twenty-five cents, for I have enough for many.

I saw in your "Helps" that soda would take the soreness out of corns. The Arm and Hammer brand of soda, mixed with water to make a thick paste and bound on a corn during the night, has cured corns for me.

I have an article called "Rusteen" that will take iron-rust right out of an article; all you have to do is to dampen the iron-rust and put on some "Rusteen" and hold it over the steam of a kettle and it will vanish.

I want to send to you a recipe for mock-cherry pie and for corn-starch pie, as they are each very toothsome.

—

DOUGHNUTS THAT WILL KEEP SOFT

By Mrs. W. E. B.

Two eggs; beat whites, then add the yolks and beat again. One cup light brown sugar (do not use granulated sugar as it makes a dry cake); one cup mashed potatoes (left from dinner); one tablespoonful of melted lard; one cup of sweet milk; cinnamon and nutmeg to taste; two teaspoonfuls of baking powder, sifted in flour; make stiff enough to roll out and fry in kettle of hot lard.

To Save Ice Bill

I put a board to fit the bottom of ice compartment of ice box, to protect it from being broken when ice was put in, and found my ice lasted much longer.

Put newspapers on each shelf and when anything is spilled, it is easy to change the paper on that shelf and saves washing every shelf in the ice box

—

PIE HINT

By Mrs. W. C. Kneale

In making any kind of fruit pie, do not put in any sugar; season it, otherwise, just as usual; take the usual quantity of sugar, make a syrup, and immediately on taking pie from the oven pour in the hot syrup through the slit on the top crust; it is delicious and no loss of juice in the oven.

MOCK-CHERRY PIE

By Miss N. A. Deuel

One cup cranberries, one cup maple sugar, one cup water, one-half cup seeded raisins, one tablespoon flour, boil all together, stirring in flour, moistened with water; when cold, add teaspoon vanilla and a little extract of almond; bake with two crusts.

Corn-Starch Pie

Beat the yolk of an egg with one cup of sugar and one and one-half tablespoonfuls corn-starch (wet the corn-starch with a little milk); put all into one pint of boiling milk, stir constantly until a nice custard; when it is only warm, flavor with lemon and fill in a crust already baked; when baked, frost it and set in the oven till a delicate golden brown.

Cocoanut Pie

Use the recipe for corn-starch pie and add one-half of a ten-cent package of prepared cocoanut and you will have a very nice cocoanut pie.

Generally Useful Hints

1—Pieces of cloth or paper, dipped in turpentine, will keep moths and carpet-bugs away.

2—Tansy put among blankets is good to keep moths away.

3—Chamois is very fine to mend corsets.

4—Very cute little baskets can be made by cutting around large oranges, only leaving enough for handles, then scraping out the inside and filling with desserts made of tapioca, or anything you choose, and putting whipped cream on top and two little pieces of jelly, or candied cherries.

5—For floor wax, shave a five-cent cake of beeswax fine and add one quart of gasoline; let stand over night and it will be ready for use; this is the best and cheapest wax ever used. Caution:—Do not have a light in the room with the gasoline.

6—Sift a little flour over cakes before icing and it will prevent the icing from running off the cake.

7—Perhaps some of you do not know that you can skin rhubarb then slice into glass cans, fill with cold water, and always have a supply of fresh rhubarb on hand. I will add, seal the cans as for canned fruit and store away in your cold storage room.

8—Vaseline stains are hard to remove; before washing, they should be soaked in kerosene.

9—Try Parraffin oil for furniture polish; it is fine.

10—Black ribbon can be freshened by rinsing in hot coffee, or in alcohol; wrap it around a glass bottle to dry.

11—

"Smile a smile and while you smile, another smiles;
And soon there's miles and miles of smiles;
And life's worth while
If you but smile."

—

A SCREEN HINT

By Mrs. Denis Cooper

Oil your screens with linseed oil, thus doubling their life and preventing that fine rust dust from drifting into the house. In putting away the screens in the Fall, write on each the name of the room and window to which they belong; this saves much time and trouble in the Spring

Chafing Dish Cooking

Many dainty dishes can be prepared in a chafing dish.

Fish, Shrimps, Oysters, Clams and Lobsters; Frogs' Legs and Welsh Rarebit are given an appetizing and delicate relish by its use.

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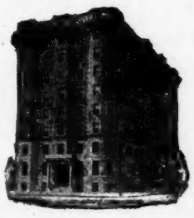
The TULLER



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Removes superfluous Hair. **Price $1.00, by mail.**
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FOR PLANTING CUCUMBERS

By Mrs. A. H. O.

When I first started to raise cucumbers, they were a failure, until one of my neighbors told me of a way which was very successful, a way of propagating that was done in Germany. In the first place, do not be in a hurry to plant them, but wait until the frost is all out of the ground; second, be sure you get fresh seeds; wait till the nights are warm; then soak the seeds in luke-warm water for half an hour or more; next, get a piece of an old cotton sheet or pillow-slip; wet thoroughly in warm water, don't wring; put the seeds in the wet cloth, roll up and put in a dry cup; keep on a shelf in a warm place for two or three days, when they will be well sprouted and ready to plant; do not let the cloth get dry while the seeds are in it; dip it, with the seeds in it, in warm water whenever needed during the two or three days Plant just before, or right after a rainfall; the ground will then be in the right condition to receive them. I was also told never to put water on the vines, but to leave that to the rain I planted the "Early White Spine" which is a fine sort, very prolific and suitable for all purposes.

Useful Baking-Powder Can

One pound cans make the daintiest little loaves of bread imaginable; so dainty and nice for picnic sandwiches, with a delicate, paper-like crust. You do not need to waste the crust, for, if rightly baked, you would not know there was any. This size of can is also fine for boiled puddings; after greasing the can, put in the pudding and tie up in a cloth and boil; never put the cover on for either bread or pudding. As a potato chopper, this can has no equal; and half-pound sizes make fine soap-shakers for washing dishes, cleaning and so forth.

—

STARCH FOR DARK CLOTHES

By F. E. Bundy

To starch dark percales, lawns, laces and so forth, take one ounce of gum arabic and pour one half a pint of boiling water over the pulverized gum arabic, which has been put in a wide-mouthed bottle; add one tablespoonful of alcohol to solution to preserve same; keep soaked when not in use. Use about a gill of this mixture added to a gallon of boiled starch; the material, when ironed, will have that lovely crisp, fresh appearance of new goods.

For Preserving

To make preserves have a whole appearance, boil the syrup until thick before adding fruit, which should be lowered into the syrup with a long-handled ladle to save bruising; the fruit should be solid, not too ripe, and freshly picked.

—

FOR THIN PEOPLE

By Mrs. Harvey Potter

Those who are too thin can add a pound a week to their weight by mixing a teaspoonful of Mellins Food with about a tablespoonful of hot water in a glass, then filling glass with milk; drink before breakfast. Repeat before dinner and supper. This was recommended by a friend of mine, a hospital nurse, and proved very successful in her own case and others.

USES OF SODA

By Wesley F. Barry

No. 1

Flowers may be kept fresh for a long time by putting a pinch of soda in the water.

No. 2

To promptly and effectually extinguish a fire, use soda. A large package of soda should be kept in every part of any building; home, factory or elsewhere. The entire contents of the package should be thrown, in case of fire, at the base of the flames with a sweeping motion of the hand. The action of the soda on the fire is to extinguish it instantly.

New Use for a Bicycle Pump

A bicycle pump will clean a sewing machine when it is clogged with dust, when it seems impossible to reach it with a cloth.

When the Bucket Leaks

When a bucket leaks, wash it with hot water and soda and dry thoroughly; then take a small paint brush and some ordinary house paint and paint over the part where the hole is, afterwards placing a small square of white material over the paint and pressing it well into position with the brush; when this is dry, add another piece of cloth in the same way; let the second patch dry and then give the pail a coat of paint inside and out.

For Insomnia

A napkin dipped in ice cold water, wrung slightly, and laid across the eyes, will cure insomnia.

Testing Milk

If you wish to know whether the milk has been "watered" or not, take a well-polished knitting needle and dip it in the milk; withdraw it immediately; if there is water in the milk, in the least, the needle will come out quite free of the milky fluid.

—

THE PROPER WAY

By M. L. H.

For washing blankets, shave and melt one pound and a half of good laundry soap; strain through a collander into a tub half full of luke-warm water; add one half pound of powdered borax and one tablespoonful of molasses; put in a double blanket and soak twenty-four hours; next morning, pat and wave them through the water, but never rub them; press the water from them and lift into a tub of clean warm water; rinse till the water is clear, using a little bluing for the last; lift them out of the water into a basket and hang in a shady, breezy place; hang *exactly* through the middle, a little full on the ine.

—

BLACK DRESSING

By Mrs. Nannie S. Sabin

Dressing: One spoonful sweet oil, two of black ink; mix well and apply with sponge to boots, shoes, black kid gloves and rusty book-covers.

Salt for Moths

As a preventative of moths, sprinkle dry salt among your furs, under and over fine carpets, upholstered furniture and so forth; they will give you a wide berth.

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Send us 10c for carriage and packing, and the cap from a jar of ***Armour's Extract of Beef,*** or the blue paper certificate inside the cap. We'll send you a handsome tea-spoon, coffee-spoon, bouillon-spoon or butter-spreader bearing ***your initial.*** We'll send up to 12 of either kind, or 12 assorted.

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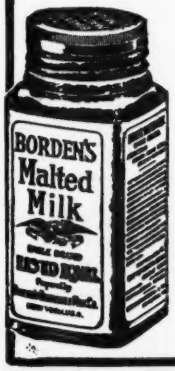

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CHRISTMAS SUGGESTIONS

By Mrs. B. R. S.

For years I have made a practice of remembering some children at Christmas time, who get presents from no one. As the pocketbook is not always equal to my love of giving, I have originated some things, of which I have never heard from any one else. I enclose a few of them.

Picture Slips

During the year I save all good pictures of animals, birds, fruits or good plain views of buildings or any suitable thing; one soon learns to know what can be used. Now take your picture and paste on pasteboard the same size (a good way to get rid of old boxes), then cut in strips an inch wide; If the picture is that of a horse, cut in five strips, and at the end of each strip place a letter; H on top piece, O on next, and so on till all the letters in "Horse" are used. Use the same method for bird, flower, or whatever the picture is. The children, who have nothing, love to put these together.

Picture Puzzles

of strips, cut them out in all sorts of shapes, but be careful to make them easy for little folks; the pictures best suited for these, are the colored ones to be found in magazines. You would be surprised, and touched, too, to see how much pleasure these simple little gifts give to the children.

Story Books

Last Christmas I made another gift that greatly pleased both myself and the school children, who received them. I knew some children whose stock of storybooks was very limited; yet they were often asked to recite in school; being children who spoke quite plainly I conceived the idea of making them books. I used wall paper (any kind will answer) cutting it in suitable sizes for use; on these sheets I pasted little stories, poetry, cute sayings, some picture rebuses, and the like; when all pasted, I put the sheets together with a cord, using pasteboard covers, pasting a picture on the front cover, leaving the back one plain. The children say: "We won't have to ask teacher any more for pieces to speak."

Picture Blocks

For quite small children, I use small pictures of animals, babies, flowers, anything that will please the little tots; cut out straight and paste on smooth wooden blocks the same size of picture, and about one-half inch thick. My twelve year old boy saws out the blocks for me—if you have no boy, perhaps your neighbor's boy will help you out.

—

PLENTY OF HOT WATER

I find one of the best ways to always have plenty of hot water on hand, is to keep it in my milk pails on the back of my range; I use lard pails to keep it in; when they are washed each morning, I fill them with fresh water and leave them on the stove while I do my cooking, and in this way have plenty of hot water for my dishes, besides having my pails scalded and sweet for the next morning's supply of milk; repeat this each day and you will seldom, if ever, have sour milk; occasionally put in a little soda or saleratus in each pail of water; I have only a cellar in which to keep our supply of milk (no ice) and I find this way very satisfactory.

NEW IDEA WASH CLOTHS

By Mrs. Dora Schertz

The nicest washcloths I ever used were made of six or eight thicknesses of white mosquito netting; white mercerized cotton can be quickly put around the edge with a crochet hook, button-hole stitch.

A Sewing Hint

When sewing, the index finger soon becomes roughened from the needle pricking through. I hit upon this plan: Use two thimbles, one on the left index finger and the other in the usual way. What a comfort! No pricked finger, or little spots of blood to come through on some fine fabric!

A Cooking Hint

I turn my collander upside down over the fish or meat sautéing in an iron spider; the small holes allow the steam to escape and still prevent the grease from spattering. Try it.

Laundry Note No. 1

One of the best methods of keeping wooden tubs in good condition when not in use, is to turn them upside down and pour water over the bottom. This is much more effective than the old way of covering the bottom with water on the inside.

Laundry Note No. 2

By adding to every tub of rinse water, one bucket of hard, or "well" water, you will find that the clothes will "take the bluing" more readily, thus requiring little bluing and improving the appearance of the clothes.

—

HOME-MADE SOAP

By Mrs. Irvin J. Zimmer

Every housewife knows that dishwater will make the hands dark, but if she will use home-made soap after this recipe, she will have as white hands as heart could desire. It is also excellent for washing any kind of clothes, as it takes out all stains.

Five pounds of grease (clean tallow or half tallow and half lard); one can of Babbitts potash dissolved in one quart of water; two tablespoonfuls of borax; three tablespoonfuls of powdered ammonia; melt grease and cool it and mix together; stir ten minutes, then mold in a box and cut before cold.

—

TO REMOVE STAINS

By L. W. L.

For removing stains from painted walls, a mixture of wheat bran and water is excellent; it should be allowed to stand till it becomes sour, then wet a cloth in the mixture and fasten it close to the stained part and let it cling there till dry; if the discoloration is still visible, a second application will be necessary.

A Harmless Cleaner

A good cleaner for oil paintings, furniture, or grained wood, is hot whey, obtained after removing curd from sour milk; it will improve oil paintings that are dimmed with age; also, it is splendid for scullery work of any kind, and will not injure any article, if well rinsed with clear water and wiped dry. Try it.